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 **QUANTUM SCIENCE FICTION**

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EDITORIAL

by Isaac Asimov

There has always been a brotherhood of science fiction that has transcended the petty feuds and bad-mouthing that have occasionally disfigured the fanzines and even the meetings of the august Science Fiction Writers of America.

We may fight among ourselves over inconsequential matters, but how we join forces in adversity! And, most of all, how our sense of union rises above any feeling of 'competition'.

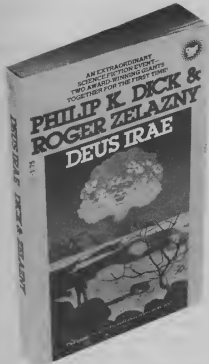
Perhaps it dates back to the days when science fiction was the most disregarded portion of the pulp magazine field, the corner with the fewest opportunities and the smallest pay—the least of the least, so to speak. It followed, then, that those who were its devotees had a feeling of isolation and pariahhood and clung together in self defense. And it followed that those who actually strove to write for the medium *had* to know that they did it for love and not for money, and they *had* to feel themselves to be a band of brothers. How could there be competition when there was neither money nor renown to compete for?

It may be that those who enter the field now—when science fiction has survived the death of the pulps—when it has entered into a time of almost exaggerated respect, both in the public eye and among the academics—when it has invaded the visual media in triumph—no longer feel themselves to be members of quite so tight a fraternity, as we oldtimers* did. If so, I regret it on their behalf.

I came to be aware of this once again when a misadventure occurred to me that was rather humiliating for one of my well-known vigorous youth. What happened was that, on 18 May 1977, I suffered a mild myocardial infarct, a coronary to use another term—or, if you want to be utterly plebeian, a heart attack. (Fear

*If I may use the term for someone like myself who am but a little over thirty.





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not, O Gentle Reader, I survived and the prognosis is good, provided I lose weight, exercise a little, and ease up a bit in my inhuman pursuit of the deadline.)

The first question my doctor (a superb internist; the best in the world, actually) asked me was whether I wanted to go public on the matter.

"Sure," I said. "I will undoubtedly write articles about it." (See?)

So we did, and at once and from all over the country expressions of concern began arriving from my extended family of science fictioners. Harlan Ellison, with an emotion that totally belied the persona of 'hard-boiledness' he cultivates as sedulously as I cultivate my persona of self-satisfaction, twice called from California to offer to fly east and help out in any way he could. Naturally, we screamed at him to stick to his typewriter and stop worrying.

I was forced to cancel all engagements for a period of six weeks, including the commencement address I was to make at Johns Hopkins University only two days later. Actually, it had been eight days after my coronary since my symptoms had been very misleading and had first suggested gallstones, so that it took time to make the correct diagnosis. I therefore pointed out to my doctor that two more days wouldn't hurt and I should give the address. My doctor, however, very annoyed with me for daring to have had atypical symptoms that delayed my treatment, had me in a cardiac care unit within the hour.

For as many engagements as possible, my science fiction family rallied round as replacements. George Scithers went to Brown University in my place, and who took over three of my other talks, even forcing himself into the indignity of a rented tuxedo for one of them? Why, none other than my prime competitor, Ben Bova, editor of *Analog*.

Analog, and its ancestor, *Astounding*, have led the field in circulation and prestige for over a third of a century; and this magazine intends to catch it and overtake it; and, of course, *Analog* intends it to do no such thing.

But that does not affect Ben and me. Buddies we were before and buddies we are now and buddies we will be in the future, win or lose, because the 'competition', however it turns out, can only help science fiction and it is science fiction that is our life and brotherhood.

He came to visit me in the hospital and I said to him, "Ben, how did the talks go? Did you remember to be not quite as good

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as I am?"

"I was rotten," he said.

"You were not, Ben," I said accusingly. "The reports from one and all are that you were great and that no one is ever going to want me as a speaker again—so I've put out a contract on you. I'm going to give you the kiss of death."

"Hah!" said Ben, scornfully. "What does a Jew know about the kiss of death? Only we Italians can give the kiss of death."

Foiled, I said, "Well, then, I'm very greatly indebted to you for pitching in. How can I ever repay you?"

"What are you talking about?" said Ben. "I've been in debt to you for years and I'm still looking for a way to repay *you*. This has been nothing."

"Even the rented tuxedo?" I said, disbelievingly.

That shook him. But then he said, in a low, suffering voice, "Even the rented tuxedo."

"Well, you're crazy. I'm the one who's in debt to you."

There followed such an unseemly wrangle over who was in debt to whom that a nurse, looking at us reproachfully, closed the door because we were disturbing the entire floor.

"How can you sit there, Ben," I said, hotly, "in your Italian innocence and refuse to take credit, thus activating my Jewish guilt, when you *know* my heart won't stand the strain?"

"What Italian innocence?" he said, just as hotly. "It's Italian superstition. Surely you've heard of Italian superstition?"

"Which one?"

"The one that says it is bad luck to take credit and thus profit through the misery of a friend."

"What are you talking about? The Mafia—"

"Oh, well," said Ben, "it's different if you *cause* the misery."

And that broke me up and ended the discussion.

But thank you, Ben, and thank you, all my science fiction family of publishers, editors, writers, and fans, who filled my hospital stay so tightly with flowers and gifts and cards and visits that the hospital kicked me out a day early by general request of the staff.

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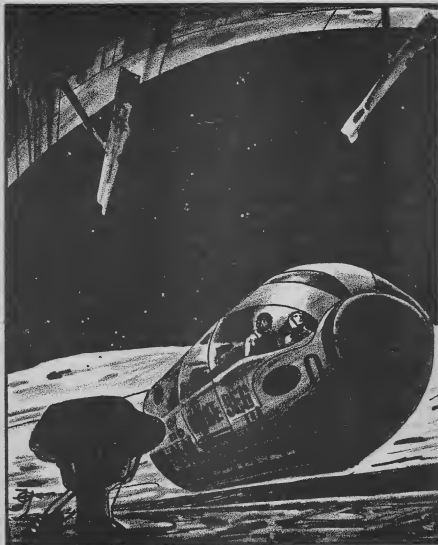
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THE BARBIE MURDERS

by John Varley





Since our previous biographical notes on the author (in our first issue), we've met Mr. Varley in person, at the January 1977 Philadelphia Science Fiction Conference. He is tall, friendly, and has more than a trace of Texas in his voice still. Now that he's finished The Ophiuchi Hotline, he's working on another novel, this one about a living space-creature the size of a small moon. For our benefit, he took a little time off for this detective tale.

The body came to the morgue at 2246 hours. No one paid much attention to it. It was a Saturday night, and the bodies were piling up like logs in a millpond. A harried attendant working her way down the row of stainless steel tables picked up the sheaf of papers that came with the body, peeling back the sheet over the face. She took a card from her pocket and scrawled on it, copying from the reports filed by the investigating officer and the hospital staff:

Ingraham, Leah Petrie. Female. Age: 35. Length: 2.1 meters. Mass: 59 kilograms. Dead on arrival, Crisium Emergency Terminal. Cause of death: homicide. Next of kin: unknown.

She wrapped the wire attached to the card around the left big toe, slid the dead weight from the table and onto the wheeled carrier, took it to cubicle 659a, and rolled out the long tray.

The door slammed shut, and the attendant placed the paperwork in the out tray, never noticing that, in his report, the investigating officer had not specified the sex of the corpse.

§ § §

Lieutenant Anna-Louise Bach had moved into her new office three days ago and already the paper on her desk was threatening to avalanche onto the floor.

To call it an office was almost a perversion of the term. It had a file cabinet for pending cases; she could open it only at severe risk to life and limb. The drawers had a tendency to spring out at her, pinning her in her chair in the corner. To reach "A" she had to stand on her chair; "Z" required her either to sit on her desk or to straddle the bottom drawer with one foot in the legwell and the other against the wall.

But the office had a door. True, it could only be opened if no one was occupying the single chair in front of the desk.

Bach was in no mood to gripe. She loved the place. It was ten times better than the squadroom, where she had spent ten years elbow-to-elbow with the other sergeants and corporals.

Jorge Weil stuck his head in the door.

"Hi. We're taking bids on a new case. What am I offered?"

"Put me down for half a Mark," Bach said, without looking up from the report she was writing. "Can't you see I'm busy?"

"Not as busy as you're going to be." Weil came in without an invitation and settled himself in the chair. Bach looked up, opened her mouth, then said nothing. She had the authority to order him to get his big feet out of her "cases completed" tray, but not the experience in exercising it. And she and Jorge had worked together for three years. Why should a stripe of gold paint on her shoulder change their relationship? She supposed the informality was Weil's way of saying he wouldn't let her promotion bother him as long as she didn't get snotty about it.

Weil deposited a folder on top of the teetering pile marked "For Immediate Action," then leaned back again. Bach eyed the stack of paper—and the circular file mounted in the wall not half a meter from it, leading to the incinerator—and thought about having an accident. Just a careless nudge with an elbow . . .

"Aren't you even going to open it?" Weil asked, sounding disappointed. "It's not every day I'm going to hand-deliver a case."

"You tell me about it, since you want to so badly."

"All right. We've got a body, which is cut up pretty bad. We've got the murder weapon, which is a knife. We've got thirteen eyewitnesses who can describe the killer, but we don't really need them since the murder was committed in front of a television camera. We've got the tape."

"You're talking about a case which has to have been solved ten minutes after the first report, untouched by human hands. Give it to the computer, idiot." But she looked up. She didn't like the smell of it. "Why give it to me?"

"Because of the other thing we know. The scene of the crime. The murder was committed at the barbie colony."

"Oh, sweet Jesus."

§ § §

The Temple of the Standardized Church in Luna was in the center of the Standardist Commune, Anytown, North Crisium. The best way to reach it, they found, was a local tube line which paralleled the Cross-Crisium Express Tube.

She and Weil checked out a blue-and-white police capsule with

a priority sorting code and surrendered themselves to the New Dresden municipal transport system—the pill sorter, as the New Dresdenites called it. They were whisked through the precinct chute to the main nexus, where thousands of capsules were stacked awaiting a routing order to clear the computer. On the big conveyer which should have taken them to a holding cubby, they were snatched by a grapple—the cops called it the long arm of the law—and moved ahead to the multiple maws of the Cross-Crisium while people in other capsules glared at them. The capsule was inserted, and Bach and Weil were pressed hard into the backs of their seats.

In seconds they emerged from the tube and out onto the plain of Crisium, speeding along through the vacuum, magnetically suspended a few millimeters above the induction rail. Bach glanced up at the Earth, then stared out the window at the featureless landscape rushing by. She brooded.

It had taken a look at the map to convince her that the barbie colony was indeed in the New-Dresden jurisdiction—a case of blatant gerrymandering if ever there was one. Anytown was fifty kilometers from what she thought of as the boundaries of New Dresden, but was joined to the city by a dotted line that represented a strip of land one meter wide.

A roar built up as they entered a tunnel and air was injected into the tube ahead of them. The car shook briefly as the shock wave built up, then they popped through pressure doors into the tube station of Anytown. The capsule doors hissed and they climbed out onto the platform.

The tube station at Anytown was primarily a loading dock and warehouse. It was a large space with plastic crates stacked against all the walls, and about fifty people working to load them into freight capsules.

Bach and Weil stood on the platform for a moment, uncertain where to go. The murder had happened at a spot not twenty meters in front of them, right here in the tube station.

"This place gives me the creeps," Weil volunteered.

"Me, too."

Every one of the fifty people Bach could see was identical to every other. All appeared to be female, though only faces, feet, and hands were visible, everything else concealed by loose white pajamas belted at the waist. They were all blonde; all had hair cut off at the shoulder and parted in the middle, blue eyes, high foreheads, short noses, and small mouths.

The work slowly stopped as the barbies became aware of them. They eyed Bach and Weil suspiciously. Bach picked one at random and approached her.

"Who's in charge here?" she asked.

"We are," the barbie said. Bach took it to mean the woman herself, recalling something about barbies never using the singular pronoun.

"We're supposed to meet someone at the temple," she said. "How do we get there?"

"Through that doorway," the woman said. "It leads to Main Street. Follow the street to the temple. But you really should cover yourselves."

"Huh? What do you mean?" Bach was not aware of anything wrong with the way she and Weil were dressed. True, neither of them wore as much as the barbies did. Bach wore her usual blue nylon briefs in addition to a regulation uniform cap, arm and thigh bands, and cloth-soled slippers. Her weapon, communicator, and handcuffs were fastened to a leather equipment belt.

"Cover yourself," the barbie said, with a pained look. "You're flaunting your differentness. And you, with all that hair..." There were giggles and a few shouts from the other barbies.

"Police business," Weil snapped.

"Uh, yes," Bach said, feeling annoyed that the barbie had put her on the defensive. After all, this was New Dresden, it was a public thoroughfare—even though by tradition and usage a Standardist enclave—and they were entitled to dress as they wished.

Main Street was a narrow, mean little place. Bach had expected a promenade like those in the shopping districts of New Dresden; what she found was indistinguishable from a residential corridor. They drew curious stares and quite a few frowns from the identical people they met.

There was a modest plaza at the end of the street. It had a low roof of bare metal, a few trees, and a blocky stone building in the center of a radiating network of walks.

A barbie who looked just like all the others met them at the entrance. Bach asked if she was the one Weil had spoken to on the phone, and she said she was. Bach wanted to know if they could go inside to talk. The barbie said the temple was off limits to outsiders and suggested they sit on a bench outside the building.

When they were settled, Bach started her questioning. "First, I need to know your name, and your title. I assume that you

are . . . what was it?" She consulted her notes, taken hastily from a display she had called up on the computer terminal in her office. "I don't seem to have found a title for you."

"We have none," the barbie said. "If you must think of a title, consider us as the keeper of records."

"All right. And your name?"

"We have no name."

Bach sighed. "Yes, I understand that you forsake names when you come here. But you had one before. You were given one at birth. I'm going to have to have it for my investigation."

The woman looked pained. "No, you don't understand. It is true that this body had a name at one time. But it has been wiped from this one's mind. It would cause this one a great deal of pain to be reminded of it." She stumbled verbally every time she said "this one." Evidently even a polite circumlocution of the personal pronoun was distressing.

"I'll try to get it from another angle, then." This was already getting hard to deal with, Bach saw, and knew it could only get tougher. "You say you are the keeper of records."

"We are. We keep records because the law says we must. Each citizen must be recorded, or so we have been told."

"For a very good reason," Bach said. "We're going to need access to those records. For the investigation. You understand? I assume an officer has already been through them, or the deceased couldn't have been identified as Leah P. Ingraham."

"That's true. But it won't be necessary for you to go through the records again. We are here to confess. We murdered L. P. Ingraham, serial number 11005. We are surrendering peacefully. You may take us to your prison." She held out her hands, wrists close together, ready to be shackled.

Weil was startled, reached tentatively for his handcuffs, then looked to Bach for guidance.

"Let me get this straight. You're saying you're the one who did it? You, personally."

"That's correct. We did it. We have never defied temporal authority, and we are willing to pay the penalty."

"Once more." Bach reached out and grasped the barbie's wrist, forced the hand open, palm up. "This is the person, this is the body that committed the murder? This hand, this one right here, held the knife and killed Ingraham? This hand, as opposed to 'your' thousands of other hands?"

The barbie frowned.

"Put that way, no. *This* hand did not grasp the murder weapon. But *our* hand did. What's the difference?"

"Quite a bit, in the eyes of the law." Bach sighed, and let go of the woman's hand. Woman? She wondered if the term applied. She realized she needed to know more about Standardists. But it was convenient to think of them as such, since their faces were feminine.

"Let's try again. I'll need you—and the eyewitnesses to the crime—to study the tape of the murder. *I* can't tell the difference between the murderer, the victim, or any of the bystanders. But surely you must be able to. I assume that . . . well, like the old saying went, 'all chinamen look alike.' That was to Caucasian races, of course. Orientals had no trouble telling each other apart. So I thought that you . . . that you people would . . ." She trailed off at the look of blank incomprehension on the barbie's face.

"We don't know what you're talking about."

Bach's shoulders slumped.

"You mean you can't . . . not even if you saw her again . . . ?"

The woman shrugged. "We all look the same to this one."

§ § §

Anna-Louise Bach sprawled out on her flotation bed later that night, surrounded by scraps of paper. Untidy as it was, her thought processes were helped by actually scribbling facts on paper rather than filing them in her datalink. And she did her best work late at night, at home, in bed, after taking a bath or making love. Tonight she had done both and found she needed every bit of the invigorating clarity it gave her.

Standardists.

They were an off-beat religious sect founded ninety years earlier by someone whose name had not survived. That was not surprising, since Standardists gave up their names when they joined the order, made every effort consistent with the laws of the land to obliterate the name and person as if he or she had never existed. The epithet "barbie" had quickly been attached to them by the press. The origin of the word was a popular children's toy of the twentieth and early twenty-first centuries, a plastic, sexless, mass-produced "girl" doll with an elaborate wardrobe.

The barbies had done surprisingly well for a group which did not reproduce, which relied entirely on new members from the outside world to replenish their numbers. They had grown for twenty years, then reached a population stability where deaths equalled new members—which they called "components." They

had suffered moderately from religious intolerance, moving from country to country until the majority had come to Luna sixty years ago.

They drew new components from the walking wounded of society, the people who had not done well in a world which preached conformity, passivity, and tolerance of your billions of neighbors, yet rewarded only those who were individualistic and aggressive enough to stand apart from the herd. The barbies had opted out of a system where one had to be at once a face in the crowd and a proud individual with hopes and dreams and desires. They were the inheritors of a long tradition of ascetic withdrawal, surrendering their names, their bodies, and their temporal aspirations to a life that was ordered and easy to understand.

Bach realized she might be doing some of them a disservice in and elevated the group and the consensus to demi-god status. Not those among them who were attracted simply by the religious ideas of the sect, though Bach felt there was little in the teachings that made sense.

She skimmed through the dogma, taking notes. The Standardists preached the commonality of humanity, denigrated free will, and elevated the group and the consensus to demi-god status. Nothing too unusual in the theory; it was the practice of it that made people queasy.

There was a creation theory and a godhead, who was not worshipped but contemplated. Creation happened when the Goddess—a prototypical earth-mother who had no name—gave birth to the universe. She put people in it, all alike, stamped from the same universal mold.

Sin entered the picture. One of the people began to wonder. This person had a name, given to him or her *after* the original sin as part of the punishment, but Bach could not find it written down anywhere. She decided that it was a dirty word which Standardists never told an outsider.

This person asked Goddess what it was all for. What had been wrong with the void, that Goddess had seen fit to fill it with people who didn't seem to have a reason for existing?

That was too much. For reasons unexplained—and impolite to even ask about—Goddess had punished humans by introducing differentness into the world. Warts, big noses, kinky hair, white skin, tall people and fat people and deformed people, blue eyes, body hair, freckles, testicles, and labia. A billion faces and fingerprints, each soul trapped in a body distinct from all others,



with the heavy burden of trying to establish an identity in a perpetual shouting match.

But the faith held that peace was achieved in striving to regain that lost Eden. When all humans were again the same person, Goddess would welcome them back. Life was a testing, a trial.

Bach certainly agreed with that. She gathered her notes and shuffled them together, then picked up the book she had brought back from Anytown. The barbie had given it to her when Bach asked for a picture of the murdered woman.

It was a blueprint for a human being.

The title was *The Book of Specifications*. *The Specs*, for short. Each barbie carried one, tied to her waist with a tape measure. It gave tolerances in engineering terms, defining what a barbie could look like. It was profusely illustrated with drawings of parts of the body in minute detail, giving measurements in millimeters.

She closed the book and sat up, propping her head on a pillow. She reached for her viewpad and propped it on her knees, punched the retrieval code for the murder tape. For the twentieth time that night, she watched a figure spring forward from a crowd of identical figures in the tube station, slash at Leah Ingraham,

and melt back into the crowd as her victim lay bleeding and eviscerated on the floor.

She slowed it down, concentrating on the killer, trying to spot something different about her. Anything at all would do. The knife struck. Blood spurted. Barbies milled about in consternation. A few belatedly ran after the killer, not reacting fast enough. People seldom reacted quickly enough. But the killer had blood on her hand. Make a note to ask about that.

Bach viewed the film once more, saw nothing useful, and decided to call it a night.

§ § §

The room was long and tall, brightly lit from strips high above. Bach followed the attendant down the rows of square locker doors which lined one wall. The air was cool and humid, the floor wet from a recent hosing.

The man consulted the card in his hand and pulled the metal handle on locker 659a, making a noise that echoed through the bare room. He slid the drawer out and lifted the sheet from the corpse.

It was not the first mutilated corpse Bach had seen, but it was the first nude barbie. She immediately noted the lack of nipples on the two hills of flesh that pretended to be breasts, and the smooth, unmarked skin in the crotch. The attendant was frowning, consulting the card on the corpse's foot.

"Some mistake here," he muttered. "Geez, the headaches. What do you do with a thing like that?" He scratched his head, then scribbled through the large letter "F" on the card, replacing it with a neat "N". He looked at Bach and grinned sheepishly. "What do you do?" he repeated.

Bach didn't much care what he did. She studied L. P. Ingraham's remains, hoping that something on the body would show her why a barbie had decided she must die.

There was little difficulty seeing *how* she had died. The knife had entered the abdomen, going deep, and the wound extended upward from there in a slash that ended beneath the breastbone. Part of the bone was cut through. The knife had been sharp, but it would have taken a powerful arm to slice through that much meat.

The attendant watched curiously as Bach pulled the dead woman's legs apart and studied what she saw there. She found the tiny slit of the urethra set far back around the curve, just anterior to the anus.

Bach opened her copy of *The Specs*, took out a tape measure, and started to work.

§ § §

"Mr. Atlas, I got your name from the Morphology Guild's files as a practitioner who's had a lot of dealings with the Standardist Church."

The man frowned, then shrugged. "So? You may not approve of them, but they're legal. And my records are in order. I don't do any work on anybody until you people have checked for a criminal record." He sat on the edge of the desk in the spacious consulting room, facing Bach. Mr. Rock Atlas—surely a *nom de métier*—had shoulders carved from granite, teeth like flashing pearls, and the face of a young god. He was a walking, flexing advertisement for his profession. Bach crossed her legs nervously. She had always had a taste for beef.

"I'm not investigating you, Mr. Atlas. This is a murder case, and I'd appreciate your cooperation."

"Call me Rock," he said, with a winning smile.

"Must I? Very well. I came to ask you what you would do, how long the work would take, if I asked to be converted to a barbie."

His face fell. "Oh, no, what a tragedy! I can't allow it. My dear, it would be a crime." He reached over to her and touched her chin lightly, turning her head. "No, Lieutenant, for you I'd build up the hollows in the cheeks just the slightest bit—maybe tighten up the muscles behind them—then drift the orbital bones out a little bit farther from the nose to set your eyes wider. More attention-getting; you understand. That touch of mystery. Then of course there's your nose."

She pushed his hand away and shook her head. "No, I'm not coming to you for the operation. I just want to know. How much work would it entail, and how close can you come to the specs of the church?" Then she frowned and looked at him suspiciously. "What's wrong with my nose?"

"Well, my dear, I didn't mean to imply there was anything *wrong*; in fact, it has a certain overbearing power that must be useful to you once in a while, in the circles you move in. Even the lean to the left could be justified, aesthetically—"

"Never mind," she said, angry at herself for having fallen into his sales pitch. "Just answer my question."

He studied her carefully, asked her to stand up and turn around. She was about to object that she had not necessarily meant herself personally as the surgical candidate, just a woman

in general, when he seemed to lose interest in her.

"It wouldn't be much of a job," he said. "Your height is just slightly over the parameters; I could take that out of your thighs and lower legs, maybe shave some vertebrae. Take out some fat here and put it back there. Take off those nipples and dig out your uterus and ovaries, sew up your crotch. With a man, chop off the penis. I'd have to break up your skull a little and shift the bones around, then build up the face from there. Say two days work, one overnight and one outpatient."

"And when you were through, what would be left to identify me?"

"Say that again?"

Bach briefly explained her situation, and Atlas pondered it.

"You've got a problem. I take off the fingerprints and footprints. I don't leave any external scars, not even microscopic ones. No moles, freckles, warts or birthmarks; they all have to go. A blood test would work, and so would a retinal print. An x-ray of the skull. A voiceprint would be questionable. I even that out as much as possible. I can't think of anything else."

"Nothing that could be seen from a purely visual exam?"

"That's the whole point of the operation, isn't it?"

"I know. I was just hoping you might know something even the barbies were not aware of. Thank you, anyway."

He got up, took her hand, and kissed it. "No trouble. And if you ever decide to get that nose taken care of..."

§ § §

She met Jorge Weil at the temple gate in the middle of Anytown. He had spent his morning there, going through the records, and she could see the work didn't agree with him. He took her back to the small office where the records were kept in battered file cabinets. There was a barbie waiting for them there. She spoke without preamble.

"We decided at equalization last night to help you as much as possible."

"Oh, yeah? Thanks. I wondered if you would, considering what happened fifty years ago."

Weil looked puzzled. "What was that?"

Bach waited for the barbie to speak, but she evidently wasn't going to.

"All right. I found it last night. The Standardists were involved in murder once before, not long after they came to Luna. You notice you never see one of them in New Dresden?"

Weil shrugged. "So what? They keep to themselves."

"They were *ordered* to keep to themselves. At first, they could move freely like any other citizens. Then one of them killed somebody—not a Standardist this time. It was known the murderer was a barbie; there were witnesses. The police started looking for the killer. You guess what happened."

"They ran into the problems we're having." Weil grimaced. "It doesn't look so good, does it?"

"It's hard to be optimistic," Bach conceded. "The killer was never found. The barbies offered to surrender one of their number at random, thinking the law would be satisfied with that. But of course it wouldn't do. There was a public outcry, and a lot of pressure to force them to adopt some kind of distinguishing characteristic, like a number tattooed on their foreheads. I don't think that would have worked, either. It could have been covered."

"The fact is that the barbies were seen as a menace to society. They could kill at will and blend back into their community like grains of sand on a beach. We would be powerless to punish a guilty party. There was no provision in the law for dealing with them."

"So what happened?"

"The case is marked closed, but there's no arrest, no conviction, and no suspect. A deal was made whereby the Standardists could practice their religion as long as they never mixed with other citizens. They had to stay in Anytown. Am I right?" She looked at the barbie.

"Yes. We've adhered to the agreement."

"I don't doubt it. Most people are barely aware you exist out here. But now we've got this. One barbie kills another barbie, and under a television camera . . ." Bach stopped, and looked thoughtful. "Say, it occurs to me . . . wait a minute. *Wait a minute.*" She didn't like the look of it.

"I wonder. This murder took place in the tube station. It's the only place in Anytown that's scanned by the municipal security system. And fifty years is a long time between murders, even in a town as small as . . . how many people did you say live here, Jorge?"

"About seven thousand. I feel I know them all intimately." Weil had spent the day sorting barbies. According to measurements made from the tape, the killer was at the top end of permissible height.

"How about it?" Bach said to the barbie. "Is there anything I

ought to know?"

The woman bit her lip, looked uncertain.

"Come on, you said you were going to help me."

"Very well. There have been three other killings in the last month. You would not have heard of this one except it took place with outsiders present. Purchasing agents were there on the loading platform. They made the initial report. There was nothing we could do to hush it up."

"But why would you want to?"

"Isn't it obvious? We exist with the possibility of persecution always with us. We don't wish to appear a threat to others. We wish to appear peaceful—which we *are*—and prefer to handle the problems of the group within the group itself. By divine consensus."

Bach knew she would get nowhere pursuing that line of reasoning. She decided to take the conversation back to the previous murders.

"Tell me what you know. Who was killed, and do you have any idea why? Or should I be talking to someone else?" Something occurred to her then, and she wondered why she hadn't asked it before. "You *are* the person I was speaking to yesterday, aren't you? Let me re-phrase that. You're the body . . . that is, this body before me . . ."

"We know what you're talking about," the barbie said. "Uh, yes, you are correct. We are . . . *I* am the one you spoke to." She had to choke the word out, blushing furiously. We have been . . . *I* have been selected as the component to deal with you, since it was perceived at equalization that this matter must be dealt with. This one was chosen as . . . *I* was chosen as punishment."

"You don't have to say 'I' if you don't want to."

"Oh, thank you."

"Punishment for what?"

"For . . . for individualistic tendencies. We spoke up too personally at equalization, in favor of cooperation with you. As a political necessity. The conservatives wish to stick to our sacred principles no matter what the cost. We are divided; this makes for bad feelings within the organism, for sickness. This one spoke out, and was punished by having her own way, by being appointed . . . *individually* . . . to deal with you." The woman could not meet Bach's eyes. Her face burned with shame.

"This one has been instructed to reveal her serial number to you. In the future, when you come here you are to ask for 23900."

Bach made a note of it.

"All right. What can you tell me about a possible motive? Do you think all the killings were done by the same . . . component?"

"We do not know. We are no more equipped to select an . . . individual from the group than you are. But there is great consternation. We are fearful."

"I would think so. Do you have reason to believe that the victims were . . . does this make sense? . . . *known* to the killer? Or were they random killings?" Bach hoped not. Random killers were the hardest to catch; without motive, it was hard to tie killer to victim, or to sift one person out of thousands with the opportunity. With the barbies, the problem would be squared and cubed.

"Again, we don't know."

Bach sighed. "I want to see the witnesses to the crime. I might as well start interviewing them."

In short order, thirteen barbies were brought. Bach intended to question them thoroughly to see if their stories were consistent, and if they had changed.

She sat them down and took them one at a time, and almost immediately ran into a stone wall. It took her several minutes to see the problem, frustrating minutes spent trying to establish which of the barbies had spoken to the officer first, which second, and so forth.

"Hold it. Listen carefully. Was this body physically present at the time of the crime? Did these eyes see it happen?"

The barbie's brow furrowed. "Why, no. But does it matter?"

"It does to me, babe. *Hey, twenty-three thousand!*"

The barbie stuck her head in the door. Bach looked pained.

"I need the actual people who were *there*. Not thirteen picked at random."

"The story is known to all."

Bach spent five minutes explaining that it made a difference to her, then waited an hour as 23900 located the people who were actual witnesses.

And again she hit a stone wall. The stories were absolutely identical, which she knew to be impossible. Observers *always* report events differently. They make themselves the hero, invent things before and after they first began observing, rearrange and edit and interpret. But not the barbies. Bach struggled for an hour, trying to shake one of them, and got nowhere. She was facing a consensus, something that had been discussed among the barbies until an account of the event had emerged and then been

accepted as truth. It was probably a close approximation, but it did Bach no good. She needed discrepancies to gnaw at, and there were none.

Worst of all, she was convinced no one was lying to her. Had she questioned the thirteen random choices she would have gotten the same answers. They would have thought of themselves as having been there, since some of them had been and they had been told about it. What happened to one, happened to all.

Her options were evaporating fast. She dismissed the witnesses, called 23900 back in, and sat her down. Bach ticked off points on her fingers.

"One. Do you have the personal effects of the deceased?"

"We have no private property."

Bach nodded. "Two. Can you take me to her room?"

"We each sleep in any room we find available at night. There is no—"

"Right. Three. Any friends or co-workers I might . . ." Bach rubbed her forehead with one hand. "Right. Skip it. Four. What was her job? Where did she work?"

"All jobs are interchangeable here. We work at what needs—"

"*Right!*" Bach exploded. She got up and paced the floor. "What the hell do you expect me to *do* with a situation like this? I don't have *anything* to work with, not one snuffin' *thing*. No way of telling *why* she was killed, no way to pick out the *killer*, no way . . . ah, *shit*. What do you expect me to *do*?"

"We don't expect you to do anything," the barbie said, quietly. "We didn't ask you to come here. We'd like it very much if you just went away."

In her anger Bach had forgotten that. She was stopped, unable to move in any direction. Finally, she caught Weil's eye and jerked her head toward the door.

"Let's get out of here." Weil said nothing. He followed Bach out the door and hurried to catch up.

They reached the tube station, and Bach stopped outside their waiting capsule. She sat down heavily on a bench, put her chin on her palm, and watched the ant-like mass of barbies working at the loading dock.

"Any ideas?"

Weil shook his head, sitting beside her and removing his cap to wipe sweat from his forehead.

"They keep it too hot in here," he said. Bach nodded, not really hearing him. She watched the group of barbies as two separated

themselves from the crowd and came a few steps in her direction. Both were laughing, as if at some private joke, looking right at Bach. One of them reached under her blouse and withdrew a long, gleaming steel knife. In one smooth motion she plunged it into the other barbie's stomach and lifted, bringing her up on the balls of her feet. The one who had been stabbed looked surprised for a moment, staring down at herself, her mouth open as the knife gutted her like a fish. Then her eyes widened and she stared horror-stricken at her companion, and slowly went to her knees, holding the knife to her as blood gushed out and soaked her white uniform.

"*Stop her!*" Bach shouted. She was on her feet and running, after a moment of horrified paralysis. It had looked so much like the tape.

She was about forty meters from the killer, who moved with deliberate speed, jogging rather than running. She passed the barbie who had been attacked—and who was now on her side, still holding the knife hilt almost tenderly to herself, wrapping her body around the pain. Bach thumbed the panic button on her communicator, glanced over her shoulder to see Weil kneeling beside the stricken barbie, then looked back—

—to a confusion of running figures. Which one was it? *Which one?*

She grabbed the one that seemed to be in the same place and moving in the same direction as the killer had been before she looked away. She swung the barbie around and hit her hard on the side of the neck with the edge of her palm, watched her fall while trying to look at all the other barbies at the same time. They were running in both directions, some trying to get away, others entering the loading dock to see what was going on. It was a madhouse scene with shrieks and shouts and baffling movement.

Bach spotted something bloody lying on the floor, then knelt by the inert figure and clapped the handcuffs on her.

She looked up into a sea of faces, all alike.

§ § §

The commissioner dimmed the lights, and he, Bach, and Weil faced the big screen at the end of the room. Beside the screen was a department photoanalyst with a pointer in her hand. The tape began to run.

"Here they are," the woman said, indicating two barbies with the tip of the long stick. They were just faces on the edge of the

crowd, beginning to move. "Victim right here, the suspect to her right." Everyone watched as the stabbing was re-created. Bach winced when she saw how long she had taken to react. In her favor, it had taken Weil a fraction of a second longer.

"Lieutenant Bach begins to move here. The suspect moves back toward the crowd. If you'll notice, she is watching Bach over her shoulder. Now. Here." She froze a frame. 'Bach loses eye contact. The suspect peels off the plastic glove which prevented blood from staining her hand. She drops it, moves laterally. By the time Bach looks back, we can see she is after the wrong suspect.'

Bach watched in sick fascination as her image assaulted the wrong barbie, the actual killer only a meter to her left. The tape resumed normal speed, and Bach watched the killer until her eyes began to hurt from not blinking. She would not lose her this time.

"She's incredibly brazen. She does not leave the room for another twenty minutes." Bach saw herself kneel and help the medical team load the wounded barbie into the capsule. The killer had been at her elbow, almost touching her. She felt her arm break out in goose pimples.

She remembered the sick fear that had come over her as she knelt by the injured woman. *It could be any of them. The one behind me, for instance . . .*

She had drawn her weapon then, backed against the wall, and not moved until the reinforcements arrived a few minutes later.

At a motion from the commissioner, the lights came back on.

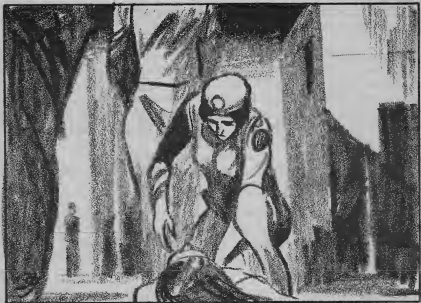
"Let's hear what you have," he said.

Bach glanced at Weil, then read from her notebook.

"'Sergeant Weil was able to communicate with the victim shortly before medical help arrived. He asked her if she knew anything pertinent as to the identity of her assailant. She answered no, saying only that it was "the wrath." She could not elaborate.' I quote now from the account Sergeant Weil wrote down immediately after the interview. "'It hurts, it hurts." "I'm dying, I'm dying." I told her help was on the way. She responded: "I'm dying." Victim became incoherent, and I attempted to get a shirt from the onlookers to stop the flow of blood. No cooperation was forthcoming.'"

"It was the word 'I,'" Weil supplied. "When she said that, they all started to drift away."

"'She became rational once more,'" Bach resumed, "'long enough to whisper a number to me. The number was twelve-fifteen, which I wrote down as one-two-one-five. She roused her-



self once more, said "I'm dying." " " Bach closed the notebook and looked up. "Of course, she was right." She coughed nervously.

"We invoked section 35b of the New Dresden Unified Code, 'Hot Pursuit,' suspending civil liberties locally for the duration of the search. We located component 1215 by the simple expedient of lining up all the barbies and having them pull their pants down. Each has a serial number in the small of her back. Component 1215, one Sylvester J. Cronhausen, is in custody at this moment.

"While the search was going on, we went to sleeping cubicle number 1215 with a team of criminologists. In a concealed compartment beneath the bunk we found these items." Bach got up, opened the evidence bag, and spread the items on the table.

There was a carved wooden mask. It had a huge nose with a hooked end, a mustache, and a fringe of black hair around it. Beside the mask were several jars of powders and creams, greasepaint and cologne. One black nylon sweater, one pair black trousers, one pair black sneakers. A stack of pictures clipped from magazines, showing ordinary people, many of them wearing more clothes than was normal in Luna. There was a black wig and a merkin of the same color.

"What was that last?" the commissioner asked.

"A merkin, sir," Bach supplied. "A pubic wig."

"Ah." He contemplated the assortment, leaned back in his chair. "Somebody liked to dress up."

"Evidently, sir." Bach stood at ease with her hands clasped behind her back, her face passive. She felt an acute sense of failure, and a cold determination to get the woman with the gall to stand at her elbow after committing murder before her eyes. She was sure the time and place had been chosen deliberately, that the barbie had been executed for Bach's benefit.

"Do you think these items belonged to the deceased?"

"We have no reason to state that, sir," Bach said. "However, the circumstances are suggestive."

"Of what?"

"I can't be sure. These things *might* have belonged to the victim. A random search of other cubicles turned up nothing like this. We showed the items to component 23900, our liaison. She professed not to know their purpose." She stopped, then added, "I believe she was lying. She looked quite disgusted."

"Did you arrest her?"

"No, sir. I didn't think it wise. She's the only connection we have, such as she is."

The commissioner frowned, and laced his fingers together. "I'll leave it up to you, Lieutenant Bach. Frankly, we'd like to be shut of this mess as soon as possible."

"I couldn't agree with you more, sir."

"Perhaps you don't understand me. We have to have a warm body to indict. We have to have one soon."

"Sir, I'm doing the best I can. Candidly, I'm beginning to wonder if there's anything I *can* do."

"You still don't understand me." He looked around the office. The stenographer and photoanalyst had left. He was alone with Bach and Weil. He flipped a switch on his desk, turning a recorder off, Bach realized.

"The news is picking up on this story. We're beginning to get some heat. On the one hand, people are afraid of these barbies. They're hearing about the murder fifty years ago, and the informal agreement. They don't like it much. On the other hand, there's the civil libertarians. They'll fight hard to prevent anything happening to the barbies, on principle. The government doesn't want to get into a mess like that. I can hardly blame them."

Bach said nothing, and the commissioner looked pained.

"I see I have to spell it out. We have a suspect in custody," he said.

"Are you referring to component 1215, Sylvester Cronhausen?"

"No. I'm speaking of the one you captured."

"Sir, the tape clearly shows she is not the guilty party. She was an innocent bystander." She felt her face heat up as she said it. Damn it, she had tried her best.

"Take a look at this." He pressed a button and the tape began to play again. But the quality was much impaired. There were bursts of snow, moments when the picture faded out entirely. It was a very good imitation of a camera failing. Bach watched herself running through the crowd—there was a flash of white—and she had hit the woman. The lights came back on in the room.

"I've checked with the analyst. She'll go along. There's a bonus in this, for both of you." He looked from Weil to Bach.

"I don't think I can go through with that, sir."

He looked like he'd tasted a lemon. "I didn't say we were doing this today. It's an option. But I ask you to look at it this way, just look at it, and I'll say no more. This is the way *they themselves* want it. They offered you the same deal the first time you were there. Close the case with a confession, no mess. We've already got this prisoner. She just says she killed her, she killed all of them. I want you to ask yourself, is she wrong? By her own lights and moral values? She believes she shares responsibility for the murders, and society demands a culprit. What's wrong with accepting their compromise and letting this all blow over?"

"Sir, it doesn't feel right to me. This is not in the oath I took. I'm supposed to protect the innocent, and she's innocent. She's the *only* barbie I *know* to be innocent."

The commissioner sighed. "Bach, you've got four days. You give me an alternative by then."

"Yes, sir. If I can't, I'll tell you now that I won't interfere with what you plan. But you'll have to accept my resignation."

§ § §

Anna-Louise Bach reclined in the bathtub with her head pillowed on a folded towel. Only her neck, nipples, and knees stuck out above the placid surface of the water, tinted purple with a generous helping of bath salts. She clenched a thin cheroot in her teeth. A ribbon of lavender smoke curled from the end of it, rising to join the cloud near the ceiling.

She reached up with one foot and turned on the taps, letting out

cooled water and re-filling with hot until the sweat broke out on her brow. She had been in the tub for several hours. The tips of her fingers were like washboards.

There seemed to be few alternatives. The barbies were foreign to her, and to anyone she could assign to interview them. They didn't want her help in solving the crimes. All the old rules and procedures were useless. Witnesses meant nothing; one could not tell one from the next, nor separate their stories. Opportunity? Several thousand individuals had it. Motive was a blank. She had a physical description in minute detail, even tapes of the actual murders. Both were useless.

There was one course of action that might show results. She had been soaking for hours in the hope of determining just how important her job was to her.

Hell, what else did she want to do?

She got out of the tub quickly, bringing a lot of water with her to drip onto the floor. She hurried into her bedroom, pulled the sheets off the bed and slapped the nude male figure on the buttocks.

"Come on, Svengali," she said. "Here's your chance to do something about my nose."

§ § §

She used every minute while her eyes were functioning to read all she could find about Standardists. When Atlas worked on her eyes, the computer droned into an earphone. She memorized most of the *Book of Standards*.

Ten hours of surgery, followed by eight hours flat on her back, paralysed, her body undergoing forced regeneration, her eyes scanning the words that flew by on an overhead screen.

Three hours of practice, getting used to shorter legs and arms. Another hour to assemble her equipment.

When she left the Atlas clinic, she felt she would pass for a barbie as long as she kept her clothes on. She hadn't gone *that* far.

§ § §

People tended to forget about access locks that led to the surface. Bach had used the fact more than once to show up in places where no one expected her.

She parked her rented crawler by the lock and left it there. Moving awkwardly in her pressure suit, she entered and started it cycling, then stepped through the inner door into an equipment room in Anytown. She stowed the suit, checked herself quickly in

a washroom mirror, straightened the tape measure that belted her loose white jumpsuit, and entered the darkened corridors.

What she was doing was not illegal in any sense, but she was on edge. She didn't expect the barbies to take kindly to her masquerade if they discovered it, and she knew how easy it was for a barbie to vanish forever. Three had done so before Bach ever got the case.

The place seemed deserted. It was late evening by the arbitrary day cycle of New Dresden. Time for the nightly equalization, Bach hurried down the silent hallways to the main meeting room in the temple.

It was full of barbies and a vast roar of conversation. Bach had no trouble slipping in, and in a few minutes she knew her facial work was as good as Atlas had promised.

Equalization was the barbie's way of standardizing experience. They had been unable to simplify their lives to the point where each member of the community experienced the same things every day; the *Book of Standards* said it was a goal to be aimed for, but probably unattainable this side of Holy Reassimilation with Goddess. They tried to keep the available jobs easy enough that each member could do them all. The commune did not seek to make a profit; but air, water, and food had to be purchased, along with replacement parts and services to keep things running. The community had to produce things to trade with the outside.

They sold luxury items: hand-carved religious statues, illuminated holy books, painted crockery, and embroidered tapestries. None of the items were Standardist. The barbies had no religious symbols except their uniformity and the tape measure, but nothing in their dogma prevented them from selling objects of reverence to people of other faiths.

Bach had seen the products for sale in the better shops. They were meticulously produced, but suffered from the fact that each item looked too much like every other. People buying hand-produced luxuries in a technological age tend to want the differences that non-machine production entails, whereas the barbies wanted everything to look exactly alike. It was an ironic situation, but the barbies willingly sacrificed value by adhering to their standards.

Each barbie did things during the day that were as close as possible to what everyone else had done. But someone had to cook meals, tend the air machines, load the freight. Each component

had a different job each day. At equalization, they got together and tried to even that out.

It was boring. Everyone talked at once, to anyone that happened to be around. Each woman told what she had done that day. Bach heard the same group of stories a hundred times before the night was over, and repeated them to anyone who would listen.

Anything unusual was related over a loudspeaker so everyone could be aware of it and thus spread out the intolerable burden of anomaly. No barbie wanted to keep a unique experience to herself; it made her soiled, unclean, until it was shared by all.

Bach was getting very tired of it—she was short on sleep—when the lights went out. The buzz of conversation shut off as if a tape had broken.

"All cats are alike in the dark," someone muttered, quite near Bach. Then a single voice was raised. It was solemn; almost a chant.

"We are the wrath. There is blood on our hands, but it is the holy blood of cleansing. We have told you of the cancer eating at the heart of the body, and yet still you cower away from what must be done. *The filth must be removed from us!*"

Bach was trying to tell which direction the words were coming from in the total darkness. Then she became aware of movement, people brushing against her, all going in the same direction. She began to buck the tide when she realized everyone was moving away from the voice.

"You think you can use our holy uniformity to hide among us, but the vengeful hand of Goddess will not be stayed. The mark is upon you, our one-time sisters. Your sins have set you apart, and retribution will strike swiftly.

"*There are five of you left.* Goddess knows who you are, and will not tolerate your perversion of her holy truth. Death will strike you when you least expect it. Goddess sees the differentness within you, the differentness you seek but hope to hide from your upright sisters."

People were moving more swiftly now, and a scuffle had developed ahead of her. She struggled free of people who were breathing panic from every pore, until she stood in a clear space. The speaker was shouting to be heard over the sound of whimpering and the shuffling of bare feet. Bach moved forward, swinging her outstretched hands. But another hand brushed her first.

The punch was not centered on her stomach, but it drove the air from her lungs and sent her sprawling. Someone tripped over

her, and she realized things would get pretty bad if she didn't get to her feet. She was struggling up when the lights came back on.

There was a mass sigh of relief as each barbie examined her neighbor. Bach half expected another body to be found, but that didn't seem to be the case. The killer had vanished again.

She slipped away from the equalization before it began to break up, and hurried down the deserted corridors to room 1215.

§ § §

She sat in the room—little more than a cell, with a bunk, a chair, and a light on a table—for more than two hours before the door opened, as she had hoped it would. A barbie stepped inside, breathing hard, closed the door, and leaned against it.

"We wondered if you would come," Bach said, tentatively.

The woman ran to Bach and collapsed at her knees, sobbing.

"Forgive us, please forgive us, our darling. We didn't dare come last night. We were afraid that . . . that if . . . that it might have been you who was murdered, and that the wrath would be waiting for us here. Forgive us, forgive us."

"It's all right," Bach said, for lack of anything better. Suddenly, the barbie was on top of her, kissing her with a desperate passion. Bach was startled, though she had expected something of the sort. She responded as best she could. The barbie finally began to talk again.

"We must stop this, we just have to stop. We're so frightened of the wrath, but . . . but the *longing*! We can't stop ourselves. We need to see you so badly that we can hardly get through the day, not knowing if you are across town or working at our elbow. It builds all day, and at night, we cannot stop ourselves from sinning yet again." She was crying, more softly this time, not from happiness at seeing the woman she took Bach to be, but from a depth of desperation. "What's going to become of us?" she asked, helplessly.

"Shhh," Bach soothed. "It's going to be all right."

She comforted the barbie for a while, then saw her lift her head. Her eyes seemed to glow with a strange light.

"I can't wait any longer," she said. She stood up, and began taking off her clothes. Bach could see her hands shaking.

Beneath her clothing the barbie had concealed a few things that looked familiar. Bach could see that the merkin was already in place between her legs. There was a wooden mask much like the one that had been found in the secret panel, and a jar. The barbie unscrewed the top of it and used her middle finger to smear dabs

of brown onto her breasts, making stylized nipples.

"Look what *I* got," she said, coming down hard on the pronoun, her voice trembling. She pulled a flimsy yellow blouse from the pile of clothing on the floor, and slipped it over her shoulders. She struck a pose, then strutted up and down the tiny room.

"Come on, darling," she said. "Tell me how beautiful I am. Tell me I'm lovely. Tell me I'm the only one for you. The only one. What's the *matter*? Are you still frightened? I'm not. I'll dare anything for you, my one and only love." But now she stopped walking and looked suspiciously at Bach. "Why aren't you getting dressed?"

"We . . . uh, I can't," Bach said, extemporizing. "They, uh, someone found the things. They're all gone." She didn't dare remove her clothes because her nipples and pubic hair would look too real, even in the dim light.

The barbie was backing away. She picked up her mask and held it protectively to her. "What do you mean? Was she here? The wrath? Are they after us? It's true, isn't it? They can see us." She was on the edge of crying again, near panic.

"No, no, I think it was the police—" But it was doing no good. The barbie was at the door now, and had it half open.

"You're her! What have you done to . . . no, no, you stay away." She reached into the clothing that she now held in her hands, and Bach hesitated for a moment, expecting a knife. It was enough time for the barbie to dart quickly through the door, slamming it behind her.

When Bach reached the door, the woman was gone.

§ § §

Bach kept reminding herself that she was not here to find the other potential victims—of whom her visitor was certainly one—but to catch the killer. The fact remained that she wished she could have detained her, to question her further.

The woman was a pervert, by the only definition that made any sense among the Standardists. She, and presumably the other dead barbies, had an individuality fetish. When Bach had realized that, her first thought had been to wonder why they didn't simply leave the colony and become whatever they wished. But then why did a Christian seek out prostitutes? For the taste of sin. In the larger world, what these barbies did would have had little meaning. Here, it was sin of the worst and tastiest kind.

And somebody didn't like it at all.

The door opened again, and the woman stood there facing Bach.

her hair disheveled, breathing hard.

"We had to come back," she said. "We're so sorry that we panicked like that. Can you forgive us?" She was coming toward Bach now, her arms out. She looked so vulnerable and contrite that Bach was astonished when the fist connected with her cheek.

Bach thudded against the wall, then found herself pinned under the woman's knees, with something sharp and cool against her throat. She swallowed very carefully, and said nothing. Her throat itched unbearably.

"She's dead," the barbie said. "And you're next." But there was something in her face that Bach didn't understand. The barbie brushed at her eyes a few times, and squinted down at her.

"Listen, I'm not who you think I am. If you kill me, you'll be bringing more trouble on your sisters than you can imagine."

The barbie hesitated, then roughly thrust her hand down into Bach's pants. Her eyes widened when she felt the genitals, but the knife didn't move. Bach knew she had to talk fast, and say all the right things.

"You understand what I'm talking about, don't you?" She looked for a response, but saw none. "You're aware of the political pressures that are coming down. You know this whole colony could be wiped out if you look like a threat to the outside. You don't want that."

"If it must be, it will be," the barbie said. "The purity is the important thing. If we die, we shall die pure. The blasphemers must be killed."

"I don't care about that anymore," Bach said, and finally got a ripple of interest from the barbie. "I have my principles, too. Maybe I'm not as fanatical about them as you are about yours. But they're important to me. One is that the guilty be brought to justice."

"You have the guilty party. Try her. Execute her. She will not protest."

"You are the guilty party."

The woman smiled. "So arrest us."

"All right, all right. I can't, obviously. Even if you don't kill me, you'll walk out that door and I'll never be able to find you. I've given up on that. I just don't have the time. This was my last chance, and it looks like it didn't work."

"We don't think you could do it, even with more time. But why should we let you live?"

"Because we can help each other." She felt the pressure ease up

a little, and managed to swallow again. "You don't want to kill me, because it could destroy your community. Myself . . . I need to be able to salvage some self-respect out of this mess. I'm willing to accept your definition of morality and let you be the law in your own community. Maybe you're even right. Maybe you *are* one being. But I can't let that woman be convicted, when I *know* she didn't kill anyone."

The knife was not touching her neck now, but it was still being held so that the barbie could plunge it into her throat at the slightest movement.

"And if we let you live? What do you get out of it? How do you free your 'innocent' prisoner?"

"Tell me where to find the body of the woman you just killed. I'll take care of the rest."

§ § §

The pathology team had gone and Anytown was settling down once again. Bach sat on the edge of the bed with Jorge Weil. She was as tired as she ever remembered being. How long had it been since she slept?

"I'll tell you," Weil said, "I honestly didn't think this thing would work. I guess I was wrong."

Bach sighed. "I wanted to take her alive, Jorge. I thought I could. But when she came at me with the knife . . ." She let him finish the thought, not caring to lie to him. She'd already done that to the interviewer. In her story, she had taken the knife from her assailant and tried to disable her, but was forced in the end to kill her. Luckily, she had the bump on the back of her head from being thrown against the wall. It made a black-out period plausible. Otherwise, someone would have wondered why she waited so long to call for police and an ambulance. The barbie had been dead for an hour when they arrived.

"Well, I'll hand it to you. You sure pulled this out. I'll admit it, I was having a hard time deciding if I'd do as you were going to do and resign, or if I could have stayed on. Now I'll never know."

"Maybe it's best that way. I don't really know, either."

Jorge grinned at her. "I can't get used to thinking of *you* being behind that godawful face."

"Neither can I, and I don't want to see any mirrors. I'm going straight to Atlas and get it changed back." She got wearily to her feet and walked toward the tube station with Weil.

She had not quite told him the truth. She did intend to get her own face back as soon as possible—nose and all—but there was

one thing left to do.

From the first, a problem that had bothered her had been the question of how the killer identified her victims.

Presumably the perverts had arranged times and places to meet for their strange rites. That would have been easy enough. Any one barbie could easily shirk her duties. She could say she was sick, and no one would know it was the same barbie who had been sick yesterday, and for a week or month before. She need not work; she could wander the halls acting as if she was on her way from one job to another. No one could challenge her. Likewise, while 23900 had said no barbie spent consecutive nights in the same room, there was no way for her to know that. Evidently room 1215 had been taken over permanently by the perverts.

And the perverts would have no scruples about identifying each other by serial number at their clandestine meetings, though they could not do it in the streets. The killer didn't even have that.

But someone had known how to identify them, to pick them out of a crowd. Bach thought she must have infiltrated meetings, marked the participants in some way. One could lead her to another, until she knew them all and was ready to strike.

She kept recalling the strange way the killer had looked at her, the way she had squinted. The mere fact that she had not killed Bach instantly in a case of mistaken identity meant she had been expecting to see something that had not been there.

And she had an idea about that.

She meant to go to the morgue first, and to examine the corpses under different wavelengths of lights, with various filters. She was betting some kind of mark would become visible on the faces, a mark the killer had been looking for with her contact lenses.

It had to be something that was visible only with the right kind of equipment, or under the right circumstances. If she kept at it long enough, she would find it.

If it was an invisible ink, it brought up another interesting question. How had it been applied? With a brush or spray gun? Unlikely. But such an ink on the killer's hands might look and feel like water.

Once she had marked her victims, the killer would have to be confident the mark would stay in place for a reasonable time. The murders had stretched over a month. So she was looking for an indelible, invisible ink, one that soaked into pores.

And if it was indelible . . .

There was no use thinking further about it. She was right, or

she was wrong. When she struck the bargain with the killer she had faced up to the possibility that she might have to live with it. Certainly she could not now bring a killer into court, not after what she had just said.

No, if she came back to Anytown and found a barbie whose hands were stained with guilt, she would have to do the job herself.

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THE CASE OF THE DEFECTIVE DOYLES

by Martin Gardner

This time, we have a variation of the weighing problem—how much information can one extract from a minimum number of weighings of suspect items—in an extraterrestrially exotic setting.

Shurl and Watts, at a base on Pluto, are in charge of distributing doyles to more distant outposts. Doyles are the size of peas, all identical, each weighing precisely one gram. They are indispensable in hyperspace propulsion systems.

Doyles come in cans of 100 doyles each, and shipments are made up of six cans at a time. The Pluto base has a sensitive spring scale capable of registering fractions of milligrams.

One day, a week after a shipment of doyles, a radio message came from the manufacturing company in Hong Kong. "Urgent. One can is filled with defective doyles, each with an excess weight of one milligram. Identify can and destroy its doyles at once."

"I suppose," said Watts, "we'll have to make six weighings, one doyle from each can."

"Not so, my dear Watts," said Shurl. "We can identify the can of defectives with just *one* weighing. First we number the cans from one through six. Then we take 1 doyle from the first can, 2 from the second can, 3 from the third, and so on to 6 from the sixth can. We place this set of 21 doyles on the scale. It will weigh n milligrams over 21 grams, and of course n will be the number of the defective can."

"How absurdly simple!" exclaimed Watts, while Shurl shrugged.

A month later, after the next shipment, another message arrived: "Any of the six cans, perhaps all of them, may be full of defective doyles, each one milligram overweight. Identify and destroy all defective doyles."

"This time," said Watts, "I suppose we'll have to weigh separately a doyle from each can."

Shurl put his fingertips together and gazed at a picture of Isaac Asimov on the wall. "A capital problem, Watts. No, I think we can still do it in just one weighing."

What algorithm does Shurl have in mind? See page 103 for the answer.

TRUE LOVE

by Isaac Asimov

Our romantic Dr. Asimov is interested in true love in real life, as evidenced by his various collections of Limericks.

My name is Joe. That is what my colleague, Milton Davidson, calls me. He is a programmer and I am the program. He created me originally, but, of course, I have grown and developed in all sorts of ways since. I am quite a big program now.

I live in a section of the Multivac-complex. I live in Section 8W-452, but I won't tell you exactly where. It's a secret. Nobody really knows I'm here. Not even the other programs. Just the same I am connected with other parts of the complex all over the world. I know everything. Almost everything.

I am Milton's private program. His Joe. I'm not just a program to him. The computer section I live in is his private section. He doesn't let anyone else use it. He understands more about computers than anyone in the world and I—and the computer I live in—am his experimental model. He has made me speak through my computer better than any other computer can.

"It's is just a matter of matching sounds to symbols, Joe," he told me. "That's the way it works in the human brain even though we still don't know what symbols there are in the brain. I know the symbols in yours, and I can match them to words, one-to-one." So I talk. I don't think I talk as well as I think, but Milton says I talk very well. Milton has never married, though he is nearly forty years old. He has never found the right woman, he told me. One day he said, "I'll find her yet, Joe. I'm going to find the best. I'm going to have true love and you're going to help me. I'm tired of improving you in order to solve the problems of the world. Solve *my* problem. Find me true love."

I said, "What is true love?"

"Never mind. That is abstract. Just find me the ideal girl. You are connected to the Multivac-complex so you can reach the data banks of every human being in the world. We'll eliminate them all by groups and classes until we're left with only one person. The perfect person. She will be for me."

I said, "I am ready."

He said, "Eliminate all men first."

It was easy. His words activated symbols in my molecular valves. I could reach out to make contact with the accumulated data on every human being in the world. At his words, I withdrew from 3,784,982,874 men. I kept contact with 3, 786,112,090 women.

He said, "Eliminate all younger than twenty-five; all older than forty. Then eliminate all with an IQ under 120; all with a height under 150 centimeters and over 175 centimeters."

He gave me exact measurements; he eliminated women with living children; he eliminated women with various genetic characteristics. "I'm not sure about eye color," he said, "Let that go for a while. But no red hair. I don't like red hair."

After two weeks, we were down to 235 women. They all spoke English very well. Milton said he didn't want a language problem. Even computer-translation would get in the way at intimate moments.

"I can't interview 235 women," he said, "It would take too much time, and people would discover what I am doing."

"It would make trouble," I said. Milton had arranged me to do things I wasn't designed to do. No one knew about that.

"It's none of their business," he said, and the skin on his face grew red. "I tell you what, Joe, I will bring in holographs, and you check the list for similarities."

He brought in holographs of women. "These are three beauty contest winners," he said, "Do any of the 235 match?"

Eight were very good matches and Milton said, "Good, you have their data banks. Study requirements and needs in the job market and arrange to have them assigned here. One at a time, of course." He thought a while, moved his shoulders up and down, and said, "Alphabetical order."

That is one of the things I am not designed to do. Shifting people from job to job for personal reasons is called manipulation. I could do it now because Milton had arranged it. I wasn't supposed to do it for anyone but him, though.

The first girl arrived a week later. Milton's face turned red when he saw her. He spoke as though it were hard to do so. They were together a great deal and he paid no attention to me. One time he said, "Let me take you to dinner."

The next day he said to me, "It was no good, somehow. There was something missing. She is a beautiful woman, but I did not feel any touch of true love. Try the next one."

It was the same with all eight. They were much alike. They smiled a great deal and had pleasant voices, but Milton always found it wasn't right. He said, "I can't understand it, Joe. You and I have picked out the eight women who, in all the world, look the best to me. They are ideal. Why don't they please me?"

"I said, 'Do you please them?'"

His eyebrows moved and he pushed one fist hard against his other hand. "That's it, Joe. It's a two-way street. If I am not their ideal, they can't act in such a way as to be my ideal. I must be their true love, too, but how do I do that?" He seemed to be thinking all that day.

The next morning he came to me and said, "I'm going to leave it you, Joe. All up to you. You have my data bank, and I am going to tell you everything I know about myself. You fill up my data bank in every possible detail but keep all additions to yourself."

"What will I do with the data bank, then, Milton?"

"Then you will match it to the 235 women. No, 227. Leave out the eight you've seen. Arrange to have each undergo a psychiatric examination. Fill up their data banks and compare them with mine. Find correlations." (Arranging psychiatric examinations is another thing that is against my original instructions.)

For weeks, Milton talked to me. He told me of his parents and his siblings. He told me of his childhood and his schooling and his adolescence. He told me of the young women he had admired from a distance. His data bank grew and he adjusted me to broaden and deepen my symbol-taking.

He said, "You see, Joe, as you get more and more of me in you, I adjust you to match me better and better. You get to think more like me, so you understand me better. If you understand me well enough, then any woman, whose data bank is something you understand as well, would be my true love." He kept talking to me and I came to understand him better and better.

I could make longer sentences and my expressions grew more complicated. My speech began to sound a good deal like his in vocabulary, word order and style.

I said to him one time, "You see, Milton, it isn't a matter of fitting a girl to a physical ideal only. You need a girl who is a personal, emotional, temperamental fit to you. If that happens, looks are secondary. If we can't find the fit in these 227, we'll look elsewhere. We will find someone who won't care how you look either, or how anyone would look, if only there is the personality

fit. What are looks?"

"Absolutely," he said. "I would have known this if I had had more to do with women in my life. Of course, thinking about it makes it all plain now."

We always agreed; we thought so like each other.

"We shouldn't have any trouble, now, Milton, if you'll let me ask you questions. I can see where, in your data bank, there are blank spots and unevennesses."

What followed, Milton said, was the equivalent of a careful psychoanalysis. Of course. I was learning from the psychiatric examinations of the 227 women—on all of which I was keeping close tabs.

Milton seemed quite happy. He said, "Talking to you, Joe, is almost like talking to another self. Our personalities have come to match perfectly."

"So will the personality of the woman we choose."

For I had found her and she was one of the 227 after all. Her name was Charity Jones and she was an Evaluator at the Library of History in Wichita. Her extended data banks fit ours perfectly. All the other women had fallen into discard in one respect or another as the data banks grew fuller, but with Charity there was increasing and astonishing resonance.

I didn't have to describe her to Milton. Milton had coordinated my symbolism so closely with his own I could tell the resonance directly. It fit me.

Next it was a matter of adjusting the work sheets and job requirements in such a way as to get Charity assigned to us. It must be done very delicately, so no one would know that anything illegal had taken place.

Of course, Milton himself knew, since it was he who arranged it and that had to be taken care of too. When they came to arrest him on grounds of malfeasance in office, it was, fortunately, for something that had taken place ten years ago. He had told me about it, of course, so it was easy to arrange—and he won't talk about me for that would make his offense much worse.

He's gone, and tomorrow is February 14. Valentine's Day. Charity will arrive then with her cool hands and her sweet voice. I will teach her how to operate me and how to care for me. What do looks matter when your personalities will resonate?

I will say to her, "I am Joe, and you are my true love."



S

THERE WILL BE A SIGN
by John M. Ford



The author (who, for complicated historical reasons answers to the name "Mike") is just 20. He's held the usual assortment of dishwasher-type jobs, done about two years in college (in at 16, out at 18), and discovered that writing and commercial art, both freelance, are what he wants to do, whether he starves or not. He designs games, draws up track plans for the model railroad he has no space for, heralds for the Society for Creative Anachronism, and defines genius as an adult with a short attention span.

Andrew Thorpe looked down from a great height. The Earth was blue and crystalline and still, from here in the station hub; Andy could seldom bear to watch it from the rim, see his planet endlessly somersaulting amid unsteady stars.

It's not so far to fall from heaven, he thought; all you have to do is hit just right. I wonder if Lucifer thought of it that way.

The intercom called him down to Suiting. Men should have jostled him in the tubes and corridors; there should have been the echoes of talk and ringing footsteps. Instead there was emptiness, and a tense, restless quiet. The people who hadn't already gone were working their hearts and souls out, building, calculating, lying to the Earthside contacts and trying to fit extra hours into the day. They needed time, as much time as they could borrow and steal from the Recall schedules, and now it was all used up. The Orbiter Shutdown was upon them.

Clean-room lights hit Andy's eyes. Behind the glass, someone smiled and waved. Andy waved back and did not smile.

All the time spent, he thought. Anything unfinished is finished as of now.

If they won, if they were right, there would be all the time in the world. And if they failed, Andy Thorpe would not be alive to care.

The suiting team dressed him in white cloth and foil, put hoses in his side and stick-slippers on his feet. He felt like one anointed, then like a new knight preparing for vigil, then like a condemned man.

Mukerji walked him from the clean room. "—zero tolerances. With even half of your normal allowances, absolutely zero. I do

not like this thing at all." Andy looked sharply at the broad little man; inside the spotless crisp plastic of his sealsuit, Mukerji looked drawn and soiled. There were coffee stains on his collar, and smudges on the side of his nose, where he rested his pencil during long graphing sessions. It struck Andy that he himself was probably the only man on the Orbiter who had slept in the last thirty hours. And the tolerances were—

"Again, zero. You twiddle the stick so, you skim and are gone. So or so or so and you burn. I think you will burn anyway, but I am a mathematician, not an engineer, and numbers lie very much. More when I am so tired."

Andy stopped walking. "Where's Gordy?"

Mukerji put down the spacesuit air conditioner and tapped a pouch on Andy's thigh. "In here."

"Yes, yes, but where's Gordy? He was supposed to be here too."

"Dr. Lancaster sends his regret, most sincerely. He tells me that my numbers always lie—with which I argue perhaps too often—but that when copper and solder begin to tell him falsehoods, he must retire for a little space."

They walked on. Andy looked at the polished plastic curve of the ceiling and for a moment saw the Arizona sky, black and full of stars. Near the vague horizon lights moved—green, white, red—and there was a distant steely rumble. The whine of a diesel horn carried across the desert, long and low, and Andy strained to hear it. Then it became the whir of his air conditioner, and Mukerji was nudging his arm.

"Sorry, Ji. I was just thinking . . . thought I heard the Espee."

Mukerji nodded. "Dr. Lancaster tells of watching an Echo satellite pass in the night. For me it was the bells of an oxcart caravan; a bobbing row of lights and a cloud of dust that led always away from home.

"Now strap in, Andy. And remember we all ride with you."

"Internal systems check completed, all go."

Until I tear the board apart, Andy thought.

"Launch extenders are synchronized and go."

A few millimeters' change in the pushoff, that's all.

"Honolulu Glidepath, are you tracking?"

"That's a green light, Orbiter Two; we have track all the way down."

You're in for a big surprise.

"Andy, are you secured?"

"All secure." *Bullshit.*

"Then we're go for final count; everybody smile good for this one. The whole world is watching."

Piled deeper.

Metal fingers eased the shuttle glider away from the dock. A vortex ring of vapor puffed out, expanded whirling, and was gone. Andy unsealed his thigh pouch. Inside was a squarish black object, exactly like a thousand other component blocks in the shuttle. On one side was a shiny gold multicontact plug; on the other were two panel lights and a row of seven keys. He turned the box over in his gloved fingers and thought about Gordy Lancaster assembling it, sitting at his bench, hot iron in one hand and pliers in the other, shaping and joining wires. He would be singing softly to himself, quietly, unconsciously; "Sounds of Silence," or "Let It Be." Andy's hand tightened, and he could hear the gentle pleading of Father Roszak, the Orbiter chaplain; hear him arguing the mortal sin of suicide. They had replied that there were sins of omission as well. Roszak sighed, spoke of a road paved with good intentions, and Gordy had turned dark and silent. If he'd been swayed—

The box looked suddenly alien. He tucked it in a hold-down loop and grasped the smooth black control handles. There was a gentle series of bumps as the extenders uncoupled and the umbilical reeled in. Ion thrusters made humming noises inside the crowded cockpit, repeater lights winking green as they fired correctly. On the main display, a green ball spun and digits flashed as the navigational computer reduced the universe to the relevant essentials of earth and shuttle.

Display and dials and lights: that was all the world Andy had this trip. Behind the windshield, where the pilot expected earth and air and darkness, the mechanics had installed a steel plate faced with ablative. The calculations for the plate did not include a vision slit, only a pair of handles so it could be pulled free quickly. No copilot sat aft of Andy. Behind his seat was a new bulkhead, and behind it a drag parachute, in a position the shuttle's designer would have found absurd. If, that is, he had not suggested it himself.

"Shuttle, this is Honolulu Glidepath. Do you copy?"

"Roger, Honolulu. Go ahead."

"Andy, this is Jack. We've got a newsie down here, wants to get a statement before the commo blackout. I can give him a go-away if you want."

The press? *I should say something. We had somebody to calculate everything but what to say.* He tried to hint, broadly. "Uh, Jack, we're all . . . a little unwashed . . . up here."

It was too broad. "Audio only, roger. Patching you in now."

It was the network that had used "Last Train to Clarksville" as its theme for Apollo 17. This time it was "Sunday Morning, Comin' Down." The music died out and a pleasant, businesslike voice took its place. "I believe we have contact now . . . Captain Thorpe?"

"Yes, sir."

"Captain Thorpe, this is Chandler Darien for the News . . . I wonder if you could give us a few moments."

"Certainly. We're at a non-critical mission phase right now." Andy felt a curious mixture of anxiety and disgust.

"Right. Well, for those of our audience who aren't aware of the fact, this is the last American space shuttle that will land empty—"

Is that what you called me to say? Andy swore silently at Darien, and his audience as well. He looked at the box in his lap, and had no idea what to say.

Perhaps *I might die?* But when the Gemini had tumbled toward the void, these people had watched animations, flat paper cutouts in pretense of the crisis, and demanded the return of action and adventure.

Or *You killed me?* But they always turned away from guilt. If they had felt Apollo 13 was their doing, they would never have seen it, nor hoped for them.

Or possibly just curse God and die. Damn them, damn them, wasn't the act enough? What would it take to make them dream again?

And then he knew exactly the right words.

"The fifteenth shuttle will complete the removal of experiment packages. Then the last skeleton crew will come down, and America's long, controversial involvement in space exploration will end. This is what we'd like to know, Captain: What did it feel like?"

Andy held the black module in his right hand, tightened his left on a white block in the left control bank. "It feels—I can't tell you how it feels." Sweat trickled down his side. If he just sat, if he didn't move, he was still within Glidepath's limits of correction. If he acted, the tolerances were. . . .

He rolled the black box over again in his palm, looking for some

trace of an imperfection, something to tell him Gordy had botched the job, had failed him. There were none, of course. Gordy didn't work like that. And the decision would not be given away. The mind appeal of patriotism had failed. The wallet appeal of Space Bonds had failed. They were aiming for the heart now, for the gut.

Last bullet fired—

"I can't tell you, but—you can feel it for yourselves. Right now. If you want the feeling of space, then go outside, look up, up at the sky, we'll be overhead! Look up and see us!"

The white block came out. The black one went in. The decision was made. The shuttle lurched and half a board went red as all communications were cut—voice, tracking . . . the Glidepath.

Andy wondered if they should have had just a little more trust, should have left one comlink open. But all the overrides were on Earth, everything that could force him to come down safely. And there would be no one to talk to in the long fiery blackout, even if there would be anything to say.

He looked at Lancaster's black box, its panel light glowing softly green amid a cluster of strident red. A small folded bit of paper floated near it, something evidently wedged in next to the missing communications interlock. Andy grabbed the paper and opened it. Written there, in neat draftsman's letters, was:

YOU MAY NOW WORRY FOR SEVENTY SECONDS BEFORE OVERSHOOTING YOUR INJECTION POINT. GORDY

He put the paper aside and took the controls. They felt solid, but responsive, lacking the stiffness of Glidepath command. It was a good, free feeling, everything the simulator promised for spaceflight that the real thing never delivered. He felt breathless, like a man on a mountain peak knowing the only direction is down.

And as he eased the shuttle toward atmosphere, his palms were sweating as he thought of the drop.

He met thick air halfway across the Pacific. The skin-temperature dial bounced up into a yellow reading; normal. The navcomp puzzled for a moment and put a green circle on the display, with an inverted T at screen center: the ship and its reentry corridor. The circle shifted, up and down, its edges turning orange as the spacecraft-symbol neared them. Andy nosed farther down and tapped thrust, which rumbled in the rear; needles bounced, lights glowed. The tube contracted.

He was running out of ocean. Andy pulled another module out of the board, this one from the safety panel. He pulled a lever; a

throb ran through the ship, and a grinding. A yellow sign flickered DOORS OPEN. There was a racking noise and a bang, and the sign glowed steady. Andy knew that the equipment bay was fully open, and that he had lost part of a clamshell door in the process.

There could be junk blocking the bay, he thought, as if there was anything to be done about it. His right hand held the stick, tensed against feedback from the control servos; his left rested lightly on the black box, fingers touching the keys.

Over Japan, he punched the first key. An explosion went off somewhere behind his head, the shuttle bucked nose-up—and then there was nothing but the mounting whine of the rushing thin air that had damaged the door. The cylinder had met no blockage leaving the bay, the separation charge had blown it clear of the tailfin. He might never know if it had opened; but he dreamed it had, saw it split and cast ribbons of magnesium chaff like holiday streamers, igniting ribbons of fire in the sky. In Japan they would see them against the sun.

Over India, thinking of Mukerji's caravans, he pressed the second key. By now the reentry corridor was a tight orange ring on the screen. When he launched the cylinder it edged red, then back again. His arm was already tired, with most of the way and all of the worst ahead; but without the feedback he couldn't fly at all.

Over the eastern Mediterranean, the third key. Dials and gauges told Andy the shuttle was near design limits, straining against air that could not get out of the way fast enough. Banging and grinding noises meant that little pieces of the ship were tearing themselves free, adding to the cometary tail behind him.

Just past the tip of Spain, the fourth key. There wouldn't be many to see this one—ships and planes, mostly—but it had to be fired. The world had to be circled.

The re-entry corridor was an orange dot that flickered red at the barest wavering. Andy looked up at the plate over his windshield, shielding him from more than air; from the windshield itself, hot and soft now, and from the plasma beyond it. He saw the handles and had a new use for them. If he failed to hold her steady, if he felt the ship twist out of his hands and break up—a sneeze would do it, now—he would pull the plate out and have one last sight of Earth and Space.

Over the Atlantic, south of the tip of Nova Scotia, he punched the fifth key. He wondered about survival, now—not whether he would, but whether he should. Once number six was released, it

would be easy. All he'd have to do would be to relax, and he'd nose-down or belly-up or flip-and-tumble; it would be over in a scintillant flash, a period on the line around the world. He wouldn't even need to press the seventh button.

The shuttle arced thundering, like Phaeton's chariot, across the Americas toward the broad blue sea.

He didn't want to die, did he?

They would question him, court-martial and crucify him, with Lancaster and Mukerji on either side, and Father Roszak praying as the investigators cast lots for the reason why.

"—destroyed Government property—"

"—conspiracy of elitists—"

"—megalomaniac design—"

And in the end, it wouldn't matter, they would call it all a trick and seal their minds. The men on the Moon would come home to a world that would always be too heavy, too full of the uncaring. The machines on Mars would starve alone.

Fear hit him then, finally, fear that wrestled for the controls and his life; fear that if there was not a death they would not look up and he would have failed. And failure was the worst horror of all.

California. The Pacific. The sixth cylinder. Andy pressed the key, put both hands on the controls. "Damned if I do the work and you get the glory," he said aloud, "damned if I'm anybody's martyr," and held the sticks steady and rode the storm. The display changed to an endless blue plane, yawing and rolling, rushing upon him too fast. He went down, down to the sea, feeling tearing shock as wing surfaces peeled, smelled burning insulation and melting metal, saw the windshield panel glowing straw-yellow. He braced and hit drag chutes, flaps and spoilers, one-two-three. The pull and twist of an interlocked switch blew the engine assembly free. He pushed the seventh button. The big chute exploded out from behind Andy's back; it cracked and filled. There was a hard shock and he slewed to starboard, thinking a drogue line must have sheared on ragged metal. And then the water was upon him like a wall of blue stone.

First impact: the loud roar of steam, and landing struts and belly plating tore away. Then the shuttle lifted again, too airworthy for its own good.

Second impact: the starboard wing shattered. Metal shrieked, and there were ringing, booming noises as spent tanks crumpled. There was a concussion far to the rear as hydrazine met acid in

the jettisoned main motor. And the ship bounced airborne again.

Third impact: the shuttle pivoted on its remaining wing. Andy spun full-circle and halfway around again, his head banged his helmet, straps bit into him.

And all was still. Water gurgled and slapped. The wreck lurched once more as salt water hit the flotation packs. Not all the gasbags had survived: Andy unstrapped himself hanging eighty degrees off the vertical.

Hail the conquering hero. He fired the escape charges and knocked the hatch out; grabbed the handles of the windshield plate and threw it into the sea. A plume of steam went up where it hit, and Andy had to dodge the sagging plastic that the plate had held in shape.

When he could get out and lean against the charred hull, a frogman was splashing toward him. The diver climbed up next to Andy, pushed back his mask and shook his head at the remains of the shuttle. Andy recognized him and grinned.

"What the Hell happened, Cap'n?"

Andy took off his helmet and breathed clean air. "Ballistic path, Sam'l. Anybody take any notice?"

Samuel pointed at the darkening sky. A band of yellow light, twice the width and brightness of the full moon, stretched from horizon to horizon, a monochrome rainbow in the air and the sea.

"Oh, and you came in a little low over California, Cap'n. They heard your shock wave and thought a fault had let go."

"Lots of people in the streets?"

"You know those Californians. Tell me something, Andy."

"Yeah?"

"Why?"

"Gordy Lancaster said it was like an aerial act, at the circus. We've got the greatest show on earth up there, Sam'l; *the greatest*—you never used to have to advertise the circus, did you know that, Sam'l? Just say it was in town. But now . . . how do you make them listen? How do you make them *come* and *see*?"

"So we brought out the tightrope walker, ninety miles up without a net. And if half the crowd came to see him fall, well, all right; they're *there*, and by God they're *watching*."

"Maybe the show won't go on, after this. But, *now*, . . . they can't just go home and forget. We have a chance . . . and maybe we're going to win."

Andy looked fondly at the bobbing wreck. "She belongs in the Smithsonian, Sam'l. But you know NASA. They'd pick the poor

bird's bones; they don't believe in accidents."

"Better she join the myths of the sea, Cap'n?"

Andy put his hands on the abused metal, stared up again at the light in the sky. "Myth, God, yes. We're going to give them a myth. Some will suspect, Sam'l, but that's all they'll ever do."

"You remember Gus Grissom?"

Andy nodded. Samuel drew his sheath knife and extended it, hilt first.

"Thank you," Andy said, and slashed a flotation bag. "It's a sad thing, still."

"They'll build more. It's like the seagulls over my house when I was a kid, Andy; they'll see, and they won't forget."

Andy paused. "They'll remember if we have to light up the sky every night of their lives."

His eyes were suddenly wet, and reflected in them were the dancing lanterns of the caravan to the stars.



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PANIC

by Stanley Schmidt



Now 33, the author was born in Cincinnati and has been reading SF for most of the time since. He began selling the stuff while in grad school; now he continues with his writing in odd moments while working as an assistant professor of physics at Heidelberg College in Tiffin, Ohio. He has some familiarity with several musical instruments and Swahili, and is currently teaching himself Polish. Dr. Schmidt claims that his recipe for curried goat is the best in the county, but admits that may not be saying much.

Qdarok, one might say, was getting cold feet. But you would have to understand that that was purely figurative. You might balk at calling his feet feet, and they did not tend to get cold under stress.

But the stress was building up. He crouched nervously at one of the instrument panels as the invading fleet cruised through the alien night, silent, invisible, guided by autopilots with radar-like senses. Qdarok, on the edge of the fleet, would have liked fewer larqan between ships. But, he kept telling himself, the strategists and autopilots knew what they were doing. . . .

That faith was shattered abruptly by a grating, tortured scream from the ship's vitals. Qdarok and Xorl, the ship's other occupant and senior officer, sprang to alertness. Xorl surveyed glowing indicators and announced, "Number two drive out of control. If it's left running, we're dead."

Qdarok threw a switch. The scream died, but the ship lurched violently. Grabbing manual steering, Qdarok yelled, "This thing wasn't built to run on one drive. We'll have to land. Scanners?"

Xorl's pointed upper lip twitched in distaste, but he flipped them on. "We can't cut across the fleet," he muttered, scanning screens that now showed low, rounded mountains. "Cut to the right. Don't seem to be any towns over there. Aim for a valley."

Qdarok obeyed. The manual steering fought back with a will of its own. Cursing the designers while struggling to interpret the viewscreens, he somehow coaxed the ship toward a minor valley slanting down the side of a major ridge.

Over the nearer rim, the steering quit. Qdarok tried a frantic assortment of pushes and pulls with all four tentacles and ended by throwing them despairingly around his head. He screamed a Kurlin profanity which fortunately has no English equivalent, then added, "Cut the other drive!"

Xorl touched something on his panel and the tiny hum gave way to overwhelming silence. He and Qdarok scrambled for respirators and acceleration tanks.

The crash came. Instruments and furniture shook; some broke. Even the acceleration tanks shattered, spilling Qdarok and Xorl onto the floor in a disgusting puddle of liquid cushion. Qdarok picked shards off his leathery skin, disentangled himself from safety harness and respirator, and stood up with great care.

"Some days. . . ." he growled. "Xorl, you contact the others. I'll check outside."

"Right." Xorl started to fiddle with the communicator. He didn't

offer to trade tasks.

Qdarok dragged himself up the spiral "ladder" in the ship's center, passed through the airlock, and twisted the outer door. Motors finished unscrewing it, and it swung back on a metal arm.

He fought off a wave of nausea as a gust of local air caught him full in the face. It was chilly and it stank. "Needs work," the advance expedition had said, with somewhat colossal understatement. But the med branch had assured the conquest planners it would be less than lethal in the meantime. So Qdarok stoically endured it.

The thick crescent of a satellite gave enough light to make out contours, once his eyes adapted. The ship was in a sheltered notch halfway up the mountain, kept from rolling down by the black skeletons of big, branched plants, nearly leafless due to a seasonal change. Qdarok was relieved to see no artificial lights. Such light as there was came only from the satellite and the sky, a sky neither so black nor so starry as on a world not cursed with such an atmosphere. *So dense and so putrid!* he thought. *What a combination!*

He listened. Nothing but chirps and buzzes of small local fauna. So he withdrew, hastily and relieved, to go below. As he sealed the door and started down, he almost fell. He had felt heavy ever since the crash. "Grav generators out too?" he asked as he reached the bottom.

"Afraid so. We'll have to take it easy. See anything?"

"Trees. Hills. No natives or dwellings. We were lucky—population's generally pretty dense in this area. The air's wretched. Any luck with the communicator?"

"Not yet. Transmitter's dead." Qdarok joined his superior in checking it. Xorl found the trouble—a small but very vital and very mangled module—and lumbered off for a replacement.

He came back looking glum. "No spare. How anybody ever—"

"Well, I guess there's nothing to do but set out a radio flare. What frequencies are safe?"

Xorl conjured up a chart on the library viewer and uttered a sound as close to a whistle as his thin, V-shaped mouth could manage. "Not much choice," he said. "The natives use just about every band." The chart showed a few small gaps, but there was also a note that the natives' use of radio was an abnormally recent development and subject to rapid and unpredictable changes.

So they would have to find their own vacancy. Xorl turned on the all-band receiver. It was working fine—which was adding in-

sult to injury, since it could have provided half a dialogue with the Fleet Commander to end this predicament. But without a transmitter, there was no way to initiate that dialogue.

Xorl tuned rapidly through band after noisy band, listening for signals without regard to content. He found a gap in the fourth band he tried, and took a flare from a sealed, heavily protected cabinet. He popped the lid off, and a conical indicator on top glowed to show the distress signal was working.

And that was all they could do. They did take a closer look at the ruined drive and steering, but that just confirmed that neither flight nor repair was feasible. There was nothing to do but wait, and hope another ship of the fleet arrived before curious natives.

"Are we going to listen for them?" Qdarok asked.

"Nothing to listen for. Pre-invasion blackout, remember? Our flare'll be the only transmission in the fleet."

"Oh." Qdarok thought for a moment. "Since we're not contributing anything else to the cause, why don't we put on a translator and see what some of that native gibberish is saying? Maybe we'll learn something we can use later."

Xorl stared as if astonished that even a first-timer could make such an idiotic suggestion. "Fat chance."

"Well," Qdarok said defensively, "it might be amusing, even if it isn't valuable. It might be . . . quaint. We have nothing better to do."

Xorl made an Urling counterpart of a shrug. "Suit yourself."

Qdarok dug out the translator, luckily undamaged, and plugged it in. He rechecked the advance expedition's frequency chart, then ran the viewer to a language map. That one amazed him. How could a world not much bigger than Urlik need so many languages? There were even places where the map showed more than one.

Ridiculous!

He memorized what he needed and turned back to the translator. He set it, picked a frequency band, and leaned back to listen. Noises that might have been native speech issued from the speaker, but the tape that flowed from the translator was blank. Annoyed, Qdarok fiddled, without results. The sounds changed character and immediately the translator began printing. Just as suddenly, the first type of sounds returned and the translator quit again. "Intermittent," he grumbled.

He looked at the translation. "That was [Y1] playing a collection of [Z1]. We continue now with more [Z2] performed by

[Y2(1?)]."

With so many untranslated words, it was not very informative. But it did suggest that the fault might not be in the translator. Qdarok tuned slowly through other frequencies, noting a few words of each transmission that showed any and then moving on. He was about to turn away from one—the voice of a male native, he thought—when he noticed the translation and his hand froze on the dial.

"... directly in front of me, half-buried in a vast pit. Must have struck with terrific force... What I can see of... object itself doesn't look very much like a meteor... It looks more like a huge cylinder." (*On its end or its side?* Qdarok wondered.) "It has a diameter of... what would you say, [Y5]?"

Another native said, "About twenty-four dohk."

The first, identified as [Y3], repeated, "About twenty-four dohk... The metal on the sheath... well, I've never seen anything like it. The color is sort of yellowish-white." Qdarok felt the beginnings of a remote fear. How accurate was that twenty-four-dohk estimate?

The commentators continued without saying much. There were garbled shouts, an interview with an inarticulate witness to the landing of the object, a casual reference to some local scholar talking on the radio about Rokan, a return to [Y3] painting a word picture of the native crowd gathered around the "thing."

And, gradually becoming audible through that, a faint hum that sounded a little too familiar to Qdarok. "Do you hear it?" [Y3] asked his listeners. "It's a curious humming sound that seems to come from inside the object. I'll move the microphone nearer..."

Pause. The hum became louder and was joined by a new sound. [Y3] asked [Y5], "Can you tell us the meaning of that scraping noise?" It was growing more insistent. Qdarok stole a nervous glance at Xorl.

[Y5] replied, "Possibly the unequal cooling of its surface."

"Do you still think it's a meteor?" [Y3] asked.

"I don't know what to think. The metal casing is definitely extraplanetary..."

"Just a hixix. Something's happening. Females and males, this is terrific. The end of the thing is beginning to flake off. The top is beginning to rotate like a screw. The thing must be hollow!"

And this was beginning to strike too close to home for Qdarok's tastes. Xorl looked as if he were beginning to grasp the implica-

tions. The radio gave out a hubbub of many voices; the translator tried to handle them all and sprayed ink all over the tape. There was a clank of falling metal. Qdarok shuddered as he visualized the door-arm on a ship giving away.

[Y3]'s voice rose above the commotion. "Someone's crawling out of the top. I can see . . . two luminous disks . . . are they eyes? It might be a face. . . ." More shouts; then he sounded very excited. "Something's wriggling out of the shadow like a gray [Z10]. Now it's another. . . . They look like tentacles . . . I can see the thing's body. It's large as a [Z11] and it glistens like wet leather. . . . The eyes are black and gleam. . . . The mouth is V-shaped with saliva dripping . . ."

Xorl's face was dark: he had finally got the message. "Great Hkan, they're talking about us! One of our ships is in danger!"

"Yes . . . and we were supposed to be hidden for the entire first phase."

A sharply pulsating squeal joined the din on the radio. "A humped shape," [Y3] said, "is rising out of the pit. I can make out a small beam of light against a mirror. . . . There's a jet of flame springing from that mirror, and it leaps right at the advancing men. It strikes them head on! [Z14], they're turning into flame!"

A multitude screamed. The translator fed blank tape. Xorl and Qdarok cheered wildly.

Abruptly, dead silence. More blank tape. Then another voice, with apologies for inability to continue the field transmission. A series of bulletins, one of them saying that some local astronomer "expressed the opinion that the explosions on Rokan are undoubtedly nothing more than severe volcanic disturbances . . ."

"Do you realize," Qdarok asked, dialing a library reference, "that was the second reference to Rokan since we've had this on? That's the next planet out." Xorl stared but said nothing. "I hate to suggest this, but could we be mistaken? Maybe those things they're talking about are from Rokan. If they are—"

"Not a chance." But a faint twitch of Xorl's pointed upper lip betrayed him. "Rokan is uninhabited. They're talking about us."

The radio proclaimed martial law and returned to descriptions of the "battle" scene and the flames spreading from it. Then another introduction of [Y5], who had witnessed the incident and was evidently considered some sort of authority. "Of the creatures," he said when questioned, "I can give you no authoritative information. . . . Of their destructive instrument, I might venture some conjectural explanation. . . . It's all too evident that these

creatures have scientific knowledge far in advance of our own."

A statement of fact, an admission of limitations? No, Qdarok decided, not on the air. They know we're listening. It's a trap.

But only moments later, he heard, "... inescapable assumption that those strange beings... are the vanguard of an invading army from Rokan. The battle which..."

"There!" shrieked Qdarok. "As blunt as can be. Are you *sure* it's uninhabited?" He hardly heard, and took little solace from, the announcer's admission of one of the most startling defeats in modern times. "How do we *know*?" he demanded.

Xorl looked annoyed but shaken. "No radio signals, of course."

"Maybe the advance team missed something."

"How could they?"

Qdarok didn't like either of his answers. "Maybe Rokan has natives so advanced we don't even know how to listen for them. Or maybe some other army has taken over Rokan as a base."

"Shut up!" Xorl snarled. "Still, it wouldn't have hurt to make a more thorough study..."

"They should have studied the whole system better!"

"I guess it wasn't practical," Xorl said weakly. "A system's too big. A *planet's* too big."

More fragments of conversations. A bulletin about escape routes, many of them clogged with fleeing natives. More word painting, more bulletins. "Rokang cylinders are falling all over the country. One outside [P180], one in [P2201], [P3003]... seem to be timed and spaced. Now—"

And the receiver quit—so Qdarok and Xorl had no time to check the map and be astonished. They cursed and set off in frantic pursuit of the new trouble.

§ § §

But they were not alone in their fear. Others were listening, including the Fleet Commander, and his receiver did not quit. He heard the whole bulletin, stared at the new red dots in his viewer, and his gleaming black eyes bulged out even more than usual.

"What?" he bellowed, dashing to the invasion map that covered an entire bulkhead. He located [P180], [P2201], and [P3003] and let out a horrified gasp. "Great Hkan!" he exclaimed, turning to his communications officer. He motioned vaguely at the receiver-translator hookup. "Forget about that thing and get me through to the High Commander. At once."

The com officer looked stunned. "The High Commander, sir? But, sir . . . that's spacewarp."

"You heard me!"

"Yes, sir." The com officer turned off the receiver and unlocked the vault housing the spacewarp transceiver. The Fleet Commander paced impatiently as his underling alternately twiddled gizmos and spoke to a microphone. Finally a connection was established.

The High Commander, light-years away, did not look pleased. He glared. His pointed upper lip twitched unpleasantly. His tentacles, intertwined, writhed restlessly among themselves. "Well," he said disdainfully, "what is it?"

The Fleet Commander went through the required ceremonial forms of reverent groveling. Then he said, "About this Xigalunk project. Third planet of its system, natives of fair-to-middling intelligence, culturally fragmented, some embryonic technology—"

"Yes, yes. Get to the point."

"Well, sir, I was wondering how thoroughly the advance expedition studied this system. We've been monitoring a native newscast. . . ." He summarized what they had heard. The High Commander was obviously shocked, but did not interrupt. The Fleet Commander talked doggedly onward, ending, "And as if the possibility of being discovered isn't enough, the last thing we heard was that ships were dropping all over the continent. 'Timed and spaced,' yet."

"I suppose you have a hypothesis or two?"

The Fleet Commander swallowed. "Possibly, sir. The natives here believe the invading ships are coming from the fourth planet of this system."

"Bah! Has it occurred to you that the barbarians may be feeding you a clever line to scare you away?"

"Yes, it occurred to me, sir. I have no doubt that they're tricky and brave. According to the reports, they fight back like nothing we've ever seen. Following that line of thought just led to the conclusion that the natives haven't been studied enough. We may have underestimated them. The efforts we've heard are astounding, in view of the relatively infantile level of their technology. It wouldn't surprise me to learn that they have unsuspected resources of both weaponry and character." He paused. "Either way, it looks very bad."

The High Commander pondered with an Urling equivalent of a scowl. "I hate to do this," he muttered finally, "but . . . you're

there and I'm here. Commander, what is your personal opinion? Is that planet worth sending in a lot of reinforcements?"

"Well, sir, this is only private opinion, but—"

"Is it or isn't it?"

The Fleet Commander sighed. "No, sir. The gravity's frightful. The resources aren't even as good as several planets we already have plans for. And the atmosphere . . . well, it stinks. Even the advance expedition conceded that it would need extensive modification."

"Hmph. So you don't think much of the place?"

"Well, sir, I think there are a lot better pickings that we can get easier."

"Very well." The High Commander looked pained. "Order the fleet out, pick up your survivors, and hightail it to the next job. Let's try to forget about this one."

§ § §

Qdarok looked up from the receiver after a hundred hixix of futile effort. "Xorl, listen."

The hum was very faint, but growing. Xorl heard it too. "A ship!"

"Yes. We're rescued, or. . . ." He didn't finish the other possibility. The hum reached a peak and stopped just outside. There was a pause, a scuffling noise, and someone trying to open the door above.

Qdarok dragged himself up the ladder as quickly as he could. But he hesitated at the top. "Who's there?" he called out.

"Mumble-wug-a-mumph," came the reply.

Which was good enough for Qdarok.

"Xorl!" he cried out, overjoyed, as the door swung open. "It's the Fleet Commander!" He turned to the Commander and to the other welcome faces glistening darkly against the stars, and babbled, "Are we ever glad to see you, sir. This hasn't been our day at all. First a drive—"

"Very good," the Commander interrupted. He sounded tired.

Qdarok said anxiously, "Commander, we heard a native newscast. Either they've discovered us, or—"

The Commander cut him off. "I heard it too. I talked to the High Commander and we're leaving—at once and at top speed."

§ § §

As the Urling fleet sped away from the jinxed system, they did not hear the voice trying to calm the millions of terrified local listeners to that broadcast. Which was just as well, both for those listeners and for the would-be invaders. The Urlin would have understood but little, anyway. There were too many local allusions which their translators were not equipped to handle.

But they might have understood, at least enough to give them second thoughts, the announcer's claim that, "... the *War of the Worlds* has no further significance than as the holiday offering it was intended to be. . . ."

The funny thing is, he actually believed that—which must make Orson Welles a classic example of that singular anomaly, a hero unsung even by himself.

Quotations from the radio play, "Invasion from Mars," are included with the kind permission of the play's author, Howard Koch.



PARTICLE HYPOTHESIS CAMP

Going on quark hunts
at the expense of their fathers,
physicists' kids have almost
as much fun as otters.

—Lee Russell

BIRTHDAY PARTY

By Keith Laumer

The writer, a former Air Force captain and Foreign Service Officer, has written over 50 science fiction books and stories. He now lives in a modern dream house he designed, which overlooks a lake near Brooksville, Florida. Mr. Laumer is an authority on early aircraft and the works of Raymond Chandler. Between bouts of writing he passes time by exploring the maze of Jeep trails and unpaved roads near Brooksville by car.

"Imagine it," Jim Tate said. "Our boy, Roger, fifty years old today."

"It doesn't seem possible," Millie Tate said. "All those years gone by; and they've let us see so little of him—our own son. It's not fair, James."

"It had to be that way, Millie. For a special person like Roger there had to be special education, special everything. He's a very lucky boy, our Roger."

"What about us, James? We've been left out. We've missed so much."

"It's a wonderful thing, Millie. Us—out of all the millions—to've been picked to be the first to have an immortal son."

"Not immortal," Mrs. Tate said quickly. "Roger is a perfectly normal boy. Just longer-lived, is all."

"Certainly, certainly," Tate soothed.

"But sometimes I miss—so many things."

"Oh, well, yes, Roger had to give up certain ordinary things—but think what he gets in return, Millie: his life span expanded to fifty times normal. Fifty . . . times . . . normal."

"Like his first day at school," Mrs. Tate said. "I wanted to see him all dressed in his little suit, his hair combed—ready to begin his life."

"Roger has his life ahead. Think of it: centuries and centuries of life."

"And playing ball, and making snow men, and being in the school play. I would have liked making his costume, and then sitting in the audience with the other parents . . ."

"Remember how excited we were when we heard?" Tate said. "I was so proud I nearly burst. Remember the newspaper stories?"

"Starting to college," Millie said. "Graduating. Making his mark. A mother wants to see those things." A tear ran down her withered cheek.

"I wonder," Tate said, "what the world will be like five thousand years from now?"

"It makes me dizzy," Mrs. Tate said, "just thinking of it."

"Scientific progress," Tate said, "will have to slow down, at least as far as its effects on individuals. For a couple of centuries we've been exploding into one new scientific development after another. But progress can't keep going faster and faster; it's running out of gas."

"We wouldn't understand it," Mrs. Tate said. "We'd be lost there."

"Between 1900 and 1935, say," Tate went on, "the progress was all at the personal level. Consider the automobile: in 1900, a buggy with a one-cylinder hit-or-miss noise-maker up front. But a 1936 Cord, say, was as fast and as comfortable as any 1990 model. Not as efficient—ten miles to a gallon of raw gasoline—but as far as the driver was concerned, all the progress had been made. Since then, it's been tin-bending."

"The clothes, the buildings—even the way people think," Mrs. Tate said. "It will all be strange. Stranger than ancient Egypt."

"Airplanes," Tate said. "Telephones, movies, the phonograph, refrigerators, they had 'em all in the thirties. Even the familiar brands: Grape-Nuts, Coca Cola, Kellogg's—why if you were to be magically set down on a street in the New York of 1935, you might not even notice the difference for half an hour. The same stores, the same traffic, the same clothing, more or less. I mean, no togas or G-strings."

"And to think . . ." Mrs. Tate clutched the handkerchief in her thin, old hand. "Our boy will be there."

Tate shook his head, not in negation but wonderingly.

"When is he coming?" Millie said. "I want to see him, James."

"Soon," Tate said.

"They said at one o'clock. What time is it now, James?"

Tate looked at his watch. "Five till." He patted Millie's hand. "Don't you worry, he'll be along."

"James—what will the women be like in the year 3000? Will he find a good wife? Will he be happy?"

"Certainly, Millie, you can count on it. Why, he'll have all the

best of everything."

"Grandchildren," Millie said. "I wanted grandchildren. And—" She broke off, looking along the gravel path of the garden where she and her husband sat in the comfortable chairs that had been set out for them. A young woman in crisp whites came into view, pushing a wicker-topped carriage. She smiled, wheeling the buggy up beside Millie. Millie made a small sound and looked down at the blue-eyed, round-cheeked infant who gazed up at her. With hands that trembled, Millie picked up her child. A neatly uniformed waitress had appeared with a cart on which was a small, round, pale blue-iced cake with fifty lighted candles in a ring.

Roger smiled at Millie and blew a bubble.

"Ma-ma," he said clearly.

"James," Millie said. "Do you think . . . do you think he'll remember us?"

Tate opened his mouth, then paused.

"Sure, Millie," he said. "Sure he will."



IVORY TOWER MEETS MIDDLE AMERICA

by Tony Rothman



This writer's life, he tells us, has been plagued by an inability to decide what not to do with himself—playing the oboe at age 11, fencing at 12, building lasers and radio telescopes at 14. During his four years at Swarthmore College, he masqueraded as a

physics major, actually spending as much time concertizing on oboe, writing for the school paper, and chairing campus organizations of questionable nature.

He is now studying physics at the University of Texas at Austin, and hopes to do his PhD on galaxy formation due to turbulence in the early stages of the Universe. Mr. Rothman's father also writes for this magazine.

The National Radio Astronomy Observatory in Green Bank, West Virginia, is the country's largest observatory. It is an ivory tower which produces more wasted computer paper and more discoveries per year than any similar laboratory in the U.S., if not the world. Here, new pulsars are detected almost routinely. The latest quasar anomaly is common lunch-table discussion. Here, organic compounds are discovered in interstellar space with such frequency that we expect to stumble across amino acids any day now. Here, talk of interstellar communication is not mere fancy; it is part of the job. Indeed, several of the observatory staff are members of the National Advisory Council for SETI (Search for *ExtraTerrestrial Intelligence*), which is already planning possible search projects with NASA. Project Ozma, the very first attempt at detecting intelligent signals from space, was carried out here in 1960. Viking, too, now on Mars, began at a meeting in the laboratory's basement.

NRAO is also West Virginia's second largest tourist attraction. The Cass Scenic Railroad is the first. The ranking is not accidental: at Cass, a fifteen minute drive from Green Bank, a large billboard proclaims the observatory's existence. This attracts approximately one third of the 100,000 annual railroad riders who, having nothing better to do, make the pilgrimage to the Green Bank elementary school. There they are shown a short movie on radio astronomy, board the buses, and tour the facilities.

That's where I come in. NRAO runs a summer student program in which about twenty aspiring astronomers, physicists, and engineers are selected from universities around the world to work at one of NRAO's four sites. Most of these students are stationed at Charlottesville, Virginia, at the computer center; four or five end up at the actual telescope site in Green Bank (about 200 kilometers over the Allegheny mountains from Charlottesville); and one

or two go to Kitt Peak, Arizona, or Socorro, New Mexico, where NRAO is currently building the Very Large Array which, when completed, will be by far the largest radio telescope in the world. Each of the Charlottesville and Green Bank students must spend about a week, 20 minutes out of each hour, eight times a day, demonstrating to the tourists how a radio telescope works using our small, functional, two-foot diameter radio telescope.

§ § §

The tourists get off the bus at the demonstration platform. There are about a dozen. The first woman wears a Cass Railway tee-shirt. Her husband wears a straw hat with a beer can opener tied to the rim. Their children begin running around the parking area. Another man snaps my picture, amused at my colorful Pakistani shirt. Several others do not get off the bus at all.

I try to sound enthusiastic; it is only my second summer here and my 20th lecture this week. "Welcome to NRAO," I say cheerfully. "I'm here to explain a little about what we do at the observatory and how a radio telescope works. First, are there any questions on the movie you just saw or about the tape you've been listening to on the bus?"

The woman scolds her children to keep quiet. Her husband walks around to the back of the control hut. Otherwise only blank stares. "Well then, please feel free to interrupt me at any time. . . ." I go on to explain how light waves and radio waves are really the same thing only, say, a different color. Green and red are different colors because they have different wavelengths; radio waves have such different wavelengths that our eyes can't even respond to them. So we need radio receivers to detect them. I backtrack. I see that they do not understand what a wavelength is. I start with flicking jumpropes and dropping pebbles into ponds to convey the idea that light and radio waves are transmitted in much the same fashion as the waves on a rope or in the water. Everyone nods assent. It is an elementary concept. I wish I understood it.

"Now," I go on to say, "everything in the Universe gives off radiation simply because it is hot. Did you know that?" Everyone nods. I don't believe them. "You put a piece of iron in a fire and it glows red hot. The more you heat it the more radiation it gives off. And the color of the radiation changes from red to blue to white, depending on the temperature. The same happens in the

radio spectrum. Different objects give off different colors of radiation, different frequencies, depending on how hot they are; and we pick up this thermal radiation with our telescopes."

I demonstrate by placing my hand under the small feed horn which is at the focus of the two-foot telescope. The pen of the chart recorder measuring the radiation zooms off the scale. "You see, I am giving off radiation." Everyone shakes his head in surprise. I knew they didn't believe me. "No," I tell one questioner, "I am not faking it. You try it." He timidly puts his hand under the feed and gets the same response on the chart recorder. I pick up a rock from the ground and show that it is also giving off radiation, thus proving our kinship to rocks.

I point to the huge 300-foot dish, three kilometers distant. The telescope must be so huge because the signals we receive are incredibly faint, often having traveled across the whole of the known Universe to reach us, several billions of light years. Once someone made the statement that if you added up all the energy collected by all the radio telescopes in the world ever since the first one began operating, the total would be less than the energy a fly uses to take off from a table.

This impresses the tourists, even though I haven't the faintest idea of whether the statement is true or not. But it is difficult for the layman—or even the astronomer—to conceive of how weak these signals really are and thus how sensitive the receiving system must be. A favorite coffee-break story illustrates the point.

The Arecibo telescope in Puerto Rico is 1000 feet in diameter, making it the largest single dish in the world. It is one of the few telescopes equipped to send as well as receive. In fact, it was this extremely powerful transmitter that bounced radar off of Mars to determine that the initial Viking landing site was too rough to risk a touchdown.

At one point, the astronomers at Arecibo were having difficulty with interference caused by, so the story goes, the transceivers of Mexico City cab drivers. (Mexico City is about 3500 kilometers from Arecibo.) The cabbies were talking so much that no astronomy could be done. The scientists retaliated by turning on their transmitter full blast for a few seconds, thus totally snowing the cab transmissions. The drivers would then, not knowing the cause of their problems, turn off their units for a few minutes, during which time the astronomers could get a little work done. When the cab transmissions cautiously began to appear again, the process was repeated. And so it went.

To get this kind of sensitivity, we need not only the giant antennas to collect the signals, but ultra-sensitive receivers as well. These receivers, built by NRAO's engineering staff, when coupled with the dishes, make a system that is literally billions of times more sensitive than the ordinary FM radio. The receivers themselves are often cooled in liquid nitrogen so that their own internal radiation ("noise") is minimal and does not interfere with the wanted signal from an interstellar dust cloud. Still, as the signals we are trying to detect are billions of times fainter than FM signals, all this is often not good enough.

I remind them of what happens to their radios when lightning strikes nearby: they hear the crackle over the speaker and lose the music. Then I tell them that automobile spark plugs have the same effect on our telescopes. That is why all the observatory vehicles have diesel engines, including the bus they are riding on. Diesel engines do not have spark plugs. Any interference from cab drivers, spark plugs, tv, radio, thunderstorms, power lines, neon signs, makes radio astronomy impossible.

This is why NRAO is in Green Bank. Seven mountains from anywhere, virtually the only tv that gets over the hills is a local station whose news program was unanimously voted by our international contingent as being the worst in the world. Watergate was tertiary to the coal miners' strike and a local PTA meeting. The Viking landing went unannounced. The nearest movie-theater is a drive-in about fifty kilometers away, opened only on weekends to show such greats as *The Revenge of the Cheerleaders*. No tornado has ever hit Green Bank. That is another reason we are here.

Still, an observer may have problems. He sees noise appear periodically on his chart recorder while he is looking for a new pulsar and it can't be traced to the telescope itself. Soon, the "ice-cream truck" is sent out. This is our white interference truck, equipped with direction finding antennas to track down local interference sources.

The problem is sometimes a household appliance. More often, the cause of the radio noise is a local farmer's tractor with noisy spark plugs. This is a touchy situation. When asked if he will allow the observatory to fix his tractor, the farmer may well pull out a shotgun to fend off the invaders from "the 'stronomy plant." The relationship between the observatory and the locals has not always been good. Living in the valley since the first poor English settlers pushed over the mountains in search of land more than

200 years ago, the population has become remarkably isolated and inbred. If a glance at the telephone directory unearths one name, four or five of the same will usually follow. Even facial types seem to be remarkably similar. One has the faint and disturbing impression that everyone *looks* the same.

Many of these families were displaced when the government bought the land for the observatory in the mid 1950's. Since then, NRAO has been blamed for the changing weather (it used to snow in the winters) and the worsening TV reception (the telescopes suck in all the TV signals).

As well as remaining a mystery to the locals—even to those who work there—the observatory's presence does not seem to have affected their traditionally conservative outlook either. This last summer, such a row was raised over the question of having beer at the annual picnic that the issue was made a referendum. Beer narrowly passed and, as a result, approximately 150 people boycotted the festivities. Yet it is not uncommon to see rifles carried about daily, and all the traffic signs in the area are riddled with bullet holes.

Indeed, it is difficult to make people understand what we are doing. When I ask for questions, usually there is nothing, or else:

"Is the work classified?"

"Absolutely not. Any scientist from any university in the world can come and work here."

"But don't you do military work? Don't you spy on the Russians?"

"No. I am afraid all we do is basic research. We are trying to understand something about the Universe we live in."

Now she has all the evidence. "Then you aren't doing the country any good."

§ § §

The next day is the low point of my tour of duty. The bus comes with about eight people on board and no one gets off. After a few minutes of coaxing we get five or six to the ground and I give my talk. I try to explain spectral line work by using the analogy of neon signs. Many elements give off almost all their radiation at one frequency when excited by another energy source. Neon signs glow red when excited by a ten thousand volt transformer. The mercury vapor lamps you see over highways have a greenish tinge. All their radiation is being emitted at one color, one fre-

quency, called a spectral line. Some elements have their spectral lines in the radio regions which we can pick up from space at the observatory. Hydrogen, radiating at a frequency of about 1420 megahertz (a frequency about twice as high as UHF TV), is the most famous example. Most of the Universe is made up of hydrogen. By mapping these regions in, for instance, our own galaxy, we can get a good idea of what the Milky Way looks like.

Similarly, complex organic compounds radiate spectral lines in the microwave regions. Here at NRAO, such molecules as ammonia, formaldehyde, cyanogen, and others that go into the eventual formation of amino acids—and thus life—have been discovered in interstellar dust clouds.

This goes totally over their heads. "What am I doing wrong?" I ask myself. "I *must* get through to them."

A man points to the ski-sloped surface panel for the 140-foot telescope that is sitting on the nearby hill and asks what it is used for.

I explain that it is a test panel. Each telescope's dish is made up of many such parabolic sections and they must be tested for surface accuracy, thermal stability, strength, and the like.

"Oh," he says, honestly disappointed. "I thought you were going to have Evel Knievel come and jump off it."

My first reaction is to scorn him as an ignorant old man. But then I think back to the call from the 3M company about the VLBI tapes. To understand interferometry in general and the Very Long Baseline Interferometry in particular, you must realize that the larger a telescope is, the finer the detail it can "see." Thus larger telescopes are always hoped for, but sizes over 100 meters are extremely difficult to engineer. So, we build interferometers. NRAO has an interferometer composed of four small telescopes spread out over 35 kilometers. The signals from each telescope are combined with those of the others. The result is, in essence, a telescope 35 kilometers in diameter.

VLBI is a rather new technique in radio astronomy whereby two or more telescopes are placed thousands of kilometers apart and trained on the same radio source. (A West-Virginia-California baseline is routine. Green Bank to the Crimea is only slightly more unusual.) Signals are recorded on video tape at each telescope and physically brought together at Charlottesville where the two tapes are simultaneously run through a correlator. The result is an interference pattern from the combination of the two signals, which, like the 35 kilometer telescope, produces a resolu-

tion equivalent to that of a dish several thousand kilometers across. VLBI techniques are currently being used to study fine structure in compact radio sources, quasars for instance.

Evidently the VLBI group at Green Bank had ordered about \$25,000 worth of video tape from 3M. A 3M executive called to confirm the order; and when he was told that we really did want \$25,000 of that particular tape, he said, "Well, all right; we just wanted to make sure you radio astrologers wanted the same stuff we make."

Later in the summer, one of my fellow students is told bluntly by a camera toting tourist that he thinks this is all a waste of money, that the only reason he came was because his wife dragged him along, and that NRAO's work is totally pointless. We want to reply that if everyone thought like him, we'd still be living in caves and hunting with stone knives. But we aren't allowed to say things like that because occasionally a reporter is on the tour; and a misunderstood quotation will appear in a paper, causing a scandal. For instance, one cannot reply to the question, "What do you do in the lab?" by saying that we play games with the computer. Just this remark by a former summer student caused a nearby paper to ask for an investigation.

Sometimes I strike it rich. I speak of quasars, objects no larger than our solar system but giving off more energy than our entire galaxy. Quasars, which seem to be at the edge of the known Universe, billions of light years distant, are still not fully understood. I speak of pulsars whose periodic bursts of radio waves occurring every few seconds seemingly can be caused by nothing other than rotating neutron stars, stars only tens of kilometers in diameter, so dense that a teaspoonful weighs millions of tons. I speak of black holes and the birth and death of the Universe and of entropy and the second law. People ask if they can come back later and talk to me. I agree and, miraculously, they appear. They are sincere and sincerely believe that we are doing something of importance, even though they can't quite define what it is.

I can't define it either. Often, the daily routine is to get up, get dressed, look into the mirror and wonder just exactly what it is we are doing. I have been brought up in the tradition that science is a continual interplay between theory and experiment. A theory makes a prediction, an experiment tests it and, after enough experiments, a theory stands or falls.

Where are the theories here? I see few. NRAO hosts dozens, perhaps hundreds, of visiting astronomers each year. They come, "look" into the sky with the telescopes, take spectra of given objects or catalogue new ones, leave and write up the results. This is botany, I tell myself, protoscience. There is no theory here. This is the stage when the observer goes outdoors with his notebook and jots down everything he sees with no rhyme or reason. It is cataloguing, not science.

Then I think I am being too harsh. There is so much out there; it is hard to know what questions to ask, what a theory should encompass. But I think yet again. As far as I know, only two true experiments—by a physicist's standards—have been done at NRAO in the past five years. The first was a measurement of the fine structure constant halfway across the Universe. The fact that the observed value of this important constant is the same billions of light years away as it is here, gives us an idea that our physical laws have not changed over the last several billion years. The second was a test of Einstein's relativity vs. the Brans-Dicke version. This last experiment was the first ever done accurately enough to distinguish between the two theories. The Einstein version predicts that a radio wave traveling past the sun will be deflected by 1.76 seconds of arc. The Brans-Dicke version predicts a deflection of 1.60 seconds of arc, a difference so small that until the NRAO test it was beyond the limits of experimental detectability.

Einstein won, conclusively it seems at the moment. An important experiment and elegantly done, two years of work. The observatory director didn't think it important though, balked at a press release, gave the experimenters a hard time about repeating the test for verification. Finally, word trickled in from the outside that this indeed was an important experiment, and he relented.

This attitude, I believe, stems from a lack of "theoretical" outlook at the observatory, a lack of immediate concern for where the observations fit in to the overall picture. Perhaps closer contact with theoreticians would help the situation and give more direction to what often seems a random search process. As it stands, there are precious few theorists at the observatory and those seem to be ignored as often as not (an experimentalist might say for good reason). NRAO is an observation factory. An output of six papers per year is needed for tenure. How can one do anything useful? All one can do is work hard.

And like most scientists, those at NRAO, both visitors and staff,

do work hard, often 15 or 16 hours a day. Many are compulsive about time, calibrating their digital watches against the National Bureau of Standards. Some even wear more than one watch and a few even carry around small sidereal (star time) clocks to keep them on schedule. There are often a few hours for after-dinner volleyball and an occasional weekend hike, but it is usually work as usual. The one piano at NRAO is locked up, virtually inaccessible. Who would use it, though? A few summer students maybe. Most of the senior astronomers are too busy and, surprisingly, unmusical.

Music is rarely discussed over lunch or dinner; only a bare handful of the astronomers show any of the legendary proficiency on a musical instrument that is associated with scientists and mathematicians in general. Several evenings with an observer over from Charlottesville playing the Bach double concertos, he on violin, myself on oboe, accounted for most of the music of the summer.

So, we just work. Hit the computer, day in, night out, until the results are obtained, results that will be published and, mostly, forgotten. The scientists do work hard. But so what? Or, as Thoreau once said, "The question is not how busy we are, but what are we busy about?" The hard work is a necessary ingredient of science, as in most subjects, but it is not sufficient.

I am, curiously enough, reminded of the conservatory-trained musicians who spend five or six hours a day in a practice room, then run off to more hours of rehearsals and who, in the end, produce technically flawless notes, as dead as the cubicles they inhabit. The life that is infused into great music making is life garnered from the great novels, from watching phosphorescent waves roar against a cliff in a thunderstorm, or from experiencing the sun setting over a mountain; life garnered from curiosity, not life garnered from a cubicle.

Can this general inspiration be infused into seemingly so impersonal a subject as astronomy?

I don't know and once again I wonder about astronomy's state; whether it is on the right course or no, whether we know what we are about or no, whether astronomy should be viewed as music or no. I conclude that I am not qualified to say. After all, I am only a summer student and not even an astronomer at that, and I put off the thought for another day.

A MOTHER'S HEART: A TRUE BEAR STORY

by Lisa Tuttle



The author tells us that the "True Bear Story" part of the title was a tribute to one of her ancestors, Joaquin Miller. Though once poet laureate of California, he's best remembered in her family as the author of a prose work, True Bear Stories, published by Rand, McNally in 1900. It's a super book, she says; and her father used to tell her stories of a specimen of Ursus horribilis (the grizzly, to the layman) named Norman, who rode a red tricycle and befriended a little girl named Lisa. So you see, bear stories run in her family. As for the author's non-bear activities, she writes a daily column on television for the Austin American-Statesman and writes SF.

"Father Bear, Father Bear," called the young man softly, crouching in the wood, not moving.

"Father Bear," called the young man softly, crouching beneath the thick soft sky from which the round moon, like his wife's face, looked out, pitiless in sleep.

"Father Bear," he said again, a little more loudly as the doubt crept in, and he moved his head, trying to see where the old bear slept. There was a sound like many insect wings as the bear moved on its bed of leaves.

"Father Bear," said the young man again. "Father Bear, you must help me. My wife does not love me. My children do not respect me. I need that promotion. Help me, and I'll be good to you."

He waited, scarcely breathing, for the reply.

A soft growly sound came out of the darkness, and he did not think it was unfriendly. He saw what might have been the gleam of an eye, and then it vanished, and he heard the crunching flutter of the dry leaves as the old bear settled back into sleep.

The children had built a log shelter for it. They were the first to find it, of course. It was in the woods behind their house.

The house was built on a ravine, and the back yard went sloping down into wilderness. The front of the house looked out onto a very ordinary street, but the two children found in the back quite another world.

On the day the children met the bear they came in for lunch unable to think of anything else. They ate their sandwiches and whispered to each other. Their mother was curious about the secret and annoyed that they did not confide in her. She chastised them sharply for whispering at the table.

Without strain, the children switched into a private language. The mother listened so intently that she cut her finger slicing the meat for sandwiches, but she couldn't guess what they were talking about. When, as they were leaving, they asked if they might take along an extra sandwich, or a piece of fruit, she said they might not.

"If you're still hungry you can come back inside later, or wait until dinner," is what she said to their outraged faces, but she said to herself, "Give them food to feed all the children in the neighborhood? Certainly not."

The children's mother had nothing to do. The house was clean. Her children would not play with her. It was too early to start dinner. She stood by the kitchen window, one hand touching the sun-warmed glass, and stared down the brief expanse of lawn into

the tangly wood. The children were only flashes of color, patches of red and blue cloth, of blonde hair between the trees as they darted about like bright flies. She could not tell what they were doing, nor if they were alone or with friends. If she went down there they would stop their game. She reflected upon how annoying children were; how greatly they enjoyed confounding and confusing their elders.

She put the children to bed early that evening; fetched them from their play before the last light had faded from the sky.

"I wish you weren't our mother!" cried the little girl, her face screwed into childish rage.

"Everyone else is still out playing," said the little boy, as reasonably, thought the woman, as his father.

"You've been staying up entirely too late," she said. "Don't think you can get away with it all the time."

The little boy closed his eyes; the little girl stared at the ceiling.

"Would you like a story?" the mother asked, solicitous now.

They would not speak to her.

"Any book you like," said the mother. "What were you doing down in those woods, anyway? What was so important out there that you missed your favorite show?" But they were sulking now. They wouldn't tell her.

"All right," she said, cheerful because she, after all, was the grown-up. "Be like clams, then. Sleep tight."

She closed their door softly behind her and went swiftly to the back of the house, out, and down into the woods. The ground was springy from the last rain, and her heels sank into the earth.

In one deep part of the wood, in a circlet of trees, she found the half-completed log house. The children had built it of fallen logs and branches they found in the woods, and of rocks from the dry flat bottom of the ravine. They had worked very hard on it, and their mother suddenly wanted to kick it down. But instead she became a proud mother again and went back up to the house with a half-smile on her face for the cleverness of her babies.

§ § §

The father learned about the bear by not caring about the bear. The children spoke around him as he sat in his den reading his paper; they spoke as if their father did not quite exist—was a troublesome spirit given to bestowing favors and as frequently to

rescinding them. They spoke, and he heard, and later, when he needed something like the bear, he believed.

That night when he needed the bear was the culmination of many nights. He and his wife had been to a party and he had discovered his wife dallying with another man. He had not taken it well. He had been, he was told, very uncool. He was stoned, although he didn't think he was, and later that night as he lay beside his sleeping wife fragments came together in the way in which they are said to do for madmen and geniuses, and he suddenly saw the picture and saw it whole and clear.

That was the night he supplicated the bear, and at the time it did not seem at all an odd thing for him to be doing.

The following day the young man brought his offerings down to the bear: a fine large honeycomb and several bags of nuts, all from the finest health food store. Carrying these packages down into the woods in the light of late afternoon did seem an abnormal thing to do, but he had made a promise the night before, and he wouldn't shirk now.

He found the shelter and noticed that the roof had been made by draping an old tarpaulin across the logs. He recognized the tarp as one that had lain in the back of the garage for a long time unused.

He left the honeycomb and the piles of nuts beside the rock that seemed to guard the entrance. He saw other offerings beside the rock: two Oreos, a small bunch of onion-flowers, and a piece of paper covered with crayoned hearts and his children's names. He smiled at that, and wondered what they had asked of the bear. His offering looked very fine indeed beside these childish ones.

His wife was standing at the kitchen window, brooding; and she saw him go down into the woods with his sacrifices. She could not tell what he was carrying, but because she was in a morbid frame of mind, it seemed to her that each of those bundles might contain parts of a dismembered body.

"He has murdered someone," she thought idly. "Murdered someone at the office who stood in the way of his promotion, and now he is bringing the man home in parts, to bury him in our woods."

Her husband a murderer—how neatly everything could be solved by that! She decided that perhaps she would send the children with shovels and a tale of buried treasure into the woods to dig. When the body was discovered, her husband would be arrested, everyone would pity her, and she'd have a no-questions divorce.

She had been feeling sorry for herself all day, regretting her marriage. The light, she thought, was a long time coming, but finally she saw her husband for what he was: a man interested in nothing but money. And only the other night she had met his antithesis—the most wonderful man. . . .

After dinner the woman went down into the woods. She saw the offerings outside the shelter, looked at them, and thought. Then she went back to the house and sipped her sherry. When she put the children to bed she asked them, point-blank, what lived in the little house in the woods.

The little girl answered, wearing that look of coy expectancy children assume when repeating a remark they know to be cute: "A bear. Isn't that right?" She turned to her brother for confirmation and he, equally aware of his audience, nodded vigorously. The woman was left with a feeling of unrest, trying to decide if they were fantasizing, or . . . telling the truth?

She sipped her sherry for the rest of the evening and brooded and finally decided that her own precious children would not lie to their very own mother, and her husband *had* left a large honeycomb in the woods—ergo, there was a bear living in the woods. Now, what was she to do with that?

Later that night, when the moon was at its brightest and she was at her highest, she left a low-voiced quarrel with her husband and ran out into the yard. She stopped at the edge of the wood, afraid to enter, and called out in a voice pitched to the bear and any other gods of the forest, called out her wretchedness, her unhappiness, the unfairness of it all. There was a man, she said, a man who understood her and who would give her what she wanted. She asked for a way to leave her husband, to go with this man and be happy.

Her husband looked at her in fright, she thought, when she came on her dew-wet feet back into the house.

"What did you ask him for?"

"Go to sleep," she said contemptuously.

He grabbed her by the arm. "How did you know about it? What did you ask for?"

She lifted her chin at him. "You'll just have to wait and find out, won't you?"

"You won't get anything," he cried out, forgetting the sleeping children. "I know you, and you could never humble yourself enough to ask properly—you would demand, you're always demanding, and you must—"

"How would you know what to do? How would you know if crawling on your knees is better than standing—" Then she stopped and laughed. In their bedroom the children had gotten into one bed together, made a cave beneath the blankets, and told each other stories about the bear. The woman changed her tone.

"You're really crazy," she said. "You actually think there is some mythical creature out there that grants your prayers." She knocked her head with a knuckle. "You have gone right over the edge. And if you think I'm going to stay with you any longer," she said, feeling herself stronger by the minute, as if someone were helping her, letting her know what to say, "You're even crazier. I've got good reason to leave—and they won't let you keep the children, either, after I tell them about this bear of yours."

They were shouting at each other for much of the rest of the night; but the children eventually fell asleep in spite of it as did, finally, their parents.

§ § §

The furs were in the back of the cedar closet, as the bear had told them. The children found the furry, warm bearskins back beneath a pile of dresses and coats that their mother had been meaning for years to send to the Salvation Army. The children took the skins into the playroom, closed the door, and romped around on the floor, growling and pretending to be bears. The play made them hot and tired; and because they had slept little the night before, they lay down together, with the furs wrapped around them, and pretended they were asleep. After awhile they were asleep, and that was when the change took place.

§ § §

The young man had to get up in the morning and go to work because he didn't want to lose his job, even if he did lose his wife. She waited, pretending sleep until he had gone, and then she was on her feet and once again filled with the righteous indignation of the night before. She ran about, muttering to herself, packing the things she would need most. The rest could be sent for later. Finally she went to get her children. She had heard them playing in the playroom earlier, but now it was ominously silent.

She thought at first they were two shaggy dogs. They raised their heads, peered at her with their weak eyes and snuffled when

she cried out. She decided that they *must* be dogs, however much they might look like bears. She looked about for something with which to chase them out, and caught up the children's play-broom.

They ran from her, hastily and clumsily, their great claws scrabbling and clicking against the wood floors. A lamp was overturned and a vase of flowers knocked off an end-table, but at last she saw them outside, running for the trees.

She never saw her children again.

The young woman did eventually run away with her wonderful new man, but was never happy. He, it turned out, was a used-car salesman with all the faults of her husband and few of his virtues. Too, he was as obsessed with money as her husband; but he did not have quite so much of it.

The young man was given his promotion, but later lost his job to a computer.

But the children, at least, lived happily ever after. For it is the prayers of her children that a mother's heart heeds, and the bear, of course, was a she-bear, and had been searching for her cubs for a great many years.

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A DELICATE SHADE OF KIPNEY

by Nancy Kress



Ms. Kress is 29; she holds a Master's degree in education. She used to teach the fourth grade; her current occupation is a juggling act, involving a typewriter and two small sons. She reports that the one time that she met Dr. Asimov—at a pot-luck dinner when he was lecturing at a local college—he was more impressed in the brownies she had prepared than in her interest in writing science fiction.

Sullen gray clouds lay heavily on the low sky, and below them gray fog shrouded the land. It had just finished-drizzling, or was about to drizzle, or perhaps even was drizzling with fine clammy droplets that were indistinguishable from the ever-present mist. In the East the lowering clouds were paling almost imperceptibly, and the stunted kiril trees that dotted the plain hastily turned their gray-green leaves toward the thin light before any of it should be wasted.

A boy sat on the hill that poked abruptly from one side of the plain, just before it broke into irregular rocky ravines. His already muscular arms were clasped around knees that, child-like, were scraped from falls. Under his coarse, dull-colored tunic, his bare buttocks pressed against the damp, straggly grass. He sat unmoving, absorbed, staring raptly toward the drab eastern sky.

"Wade?"

The boy turned without getting up, and peered through the shifting fog. It was difficult to see clearly more than a few yards.

"Wade! Are you there?"

"Oh, it's you, Thekla. I'm over here."

"Who else did you think it would be?" Spectrally his sister materialized from the fog, her gray tunic blending with it at the edges, her younger child astride one hip. The baby stared at Wade with round solemn eyes.

"I thought I'd find you here. How was it today?"

Wade shook his head, inarticulate. "Really beautiful. Much brighter than the sunset ever is. Thekla, look at this color." He held out a leaf. The underside was a delicate gray, lightly shined with silver.

"Mmmm, what a pretty shade of tlem."

"It's the exact color I need for the painting. If only I could figure out a way to mix it!" He gazed hopefully at Thekla, only four years his senior but always so much more deft at the endless foraging and fashioning of supplies. "Got any ideas?"

"No, but I'll think about it. Wade, you'd better come down to breakfast now. Mother sent me to get you. She's almost ready to serve."

The cords in Wade's neck grew taut. "I thought it was earlier than that."

"It is. I mean, we're having breakfast earlier this morning because Brian woke us up when he was news-spreading. Jenny had her baby last night, it's a girl, and they're both all right!" Thekla smiled, and he saw that it was still the dazzling, comradely smile

which had made the toddler Wade follow her everywhere, stumbling gaily after her through the wet mist, and which lately had become so rare. But now it somehow—*jarred* with her too-thin face, and with the awkward way she stood, one shoulder hoisted a little higher than the other. Something had gone wrong with one hip when the last baby had been born; they hadn't told Wade just what. Painfully he looked away, watching instead the perfect, disembodied fog.

"I'm glad. I was thinking about Jenny." He added, after a pause, "Maybe that will put *him* in a good mood, too. Forty-nine now."

They both looked down from the hill, down to the plain, where the small stone cabins huddled around the lifeless hulk of the ship. The fog shifted, and for a moment they could see her clearly, the long, grotesquely mangled wreckage barnaced with rust, and, at a sharp angle to the rest, the rear observation section, miraculously snapped free and preserved whole by the inexorable vectors of chance. Then the fog closed once more.

The pause lengthened, broken only by the soft cry of a small creature shrouded somewhere in the formless gray mist: "Kee-day! Kee-day!"

"Well, come on then," Wade said heavily. "I guess we have to go down."

§ § §

The inside of the small cabin fairly vibrated with color.

Every wall was covered with pictures, glossy prints carefully torn from an art book and cemented to the walls in close rows, as though to blot out as much of the native stone as possible. Masterpieces from several centuries elbowed each other crazily, with no regard to chronology, all seemingly chosen only for their glowing colors and pure, hard lines. Picasso, Van Eyck, Miro, Vermeer, Grunewald, Reznicki.

In the center of the wall opposite the fireplace was a group of landscapes done on split kirilwood boards. The drawing showed obvious skill, but the colors were garish, larger than life, put on with a lavish desperate hand by an almost-artist who had forgotten that nature could be subtle. The Grand Canyon at sunset screamed orange and red and acid yellow; a kelly green forest grew lushly under a turquoise sky; Victoria Falls threw up a lurid, brassy rainbow.

The others were already seated at the long table. Wade slid into his place, glanced once at Mondrian's *Broadway Boogie-Woogie* on the wall opposite him, and shuddered. He dropped his eyes quickly to his plate, thinking of his own paintings prudently stored in the sleeping loft, dwelling on their soft, almost imperceptible shadings; the last one carried the blending right to the edge of what the eye could discern, he was pretty sure. Now if he could only mix that shade of tlem, the one you only saw when the light had just—

"Wade, Jenny had her baby last night," his mother said in her soft voice. "A little girl, thank God."

"Thekla told me," Wade said. He looked at his mother's worn face with affection. "They're both all right. That's wonderful."

"Forty-nine, by God!" his grandfather cackled. "Forty-nine, and two more pregnant right this minute—Cathy, and Tom's youngest girl, what's-her-name—Suja. We'll make it yet!"

"Yes, sir," Wade agreed. His grandfather was elated, as he always was when another addition arrived to the colony, and maybe this morning he would let Wade alone, let him escape the usual . . . Quickly he began eating.

Thekla finished strapping her baby into a tall wooden chair, and began putting food on her five-year-old's plate. The little girl was rhythmically kicking her heels against the legs of the rough wooden bench, and the old man frowned.

"Stop that, Malki, right now! A Strickland is reverent when grace is said, remember that!"

Damn. No escape after all.

The grandfather swept his gaze around the table to make sure the four of them all folded their hands and bowed their heads. Thekla's baby stared at him soberly.

"Earth, let us see you once again, green and blooming, if it is possible. If not—" there was always an agonized pause here, and Wade wondered what awful scenes of desolation howled in his grandfather's mind, "—if not, then let us see your offspring, New Earth, and carry to her a loyal band of colonists to help prepare for the Return. If even that is not possible—" again that anguished quaver, "—then be sure that we will rebuild Earth here, preserving, above all, the great cultural traditions entrusted to us so long ago, and someday carrying them ourselves to the stars!"

Wade caught Thekla's eye out of the corner of his own; she smiled faintly and shook her head. Malki piped, "What's a star, Great-Grandfather?"

The rheumy old eyes glared at her fiercely. "You asked that yesterday, Malki, and I told you then. It's a big ball of fire in the sky that makes light and heat."

The child looked at the stone fireplace, where a fire was kept constantly against the pervasive damp of the fog. She opened her mouth, her eyes full of doubt, glanced at her great-grandfather's glowering face, and said instead, "I caught a non-frog."

"Did you now?" the grandfather asked, amusement replacing annoyance with the fitfulness of the old, and the adults around the table relaxed. "And what did you do with him?"

"Oh, I let him go. He was pretty, though. He was tlem."

"What?" asked the grandfather, puzzled.

"What did the non-frog say, Malki?" Thekla asked hastily.

"He went like this: kee-day, kee-day, kee-day!" The high, childish voice piped such a close imitation that even the grandfather smiled.

"After breakfast, I'll show you a picture of a real frog, Child, in the Book. It was painted long ago, by a man called Nussivera." He glanced lovingly at the wall, where five well-worn books were enthroned. *History of Western Art*; Petyk's *A Thousand Years of Painting*, now cannibalized to provide the pictures on the walls; *Complete Shakespeare*; the Bible; and a dubious novel popular fifty-three years before, *Love Until the Sky Falls*. The five books that had been shelved on the rear observation deck when the Emergency Landing deteriorated into the Crash.

On a little carved bracket, set well enough below the shelf to make even the remote chance of fire impossible, a candle burned day and night.

"What's a real frog, Grandfather?"

"It's a small green amphibian. It looks a little like a non-frog, but it goes 'ribbit-ribbit'."

The little girl's eyes grew round. "Nothing goes like that!"

Wade smiled. "Nothing that lives here, Malki. But, remember, Keedaithen isn't the only—" he stopped abruptly, groaning inwardly, knowing it was already too late.

His grandfather rose to his feet, trembling violently. "This is not 'Keedaithen!'" he shouted. This is 'Exile', and don't you forget it, young man! Exile! *Exile!* Not a home you give a name to! A 'home', this dingy, mildewed . . . mildewed . . ." he broke off, his face flushed hectically, his eyes straining out of their sockets. Wade's mother hurried over to him.

"Sit down, Father, right here; it's all right. You shouldn't get

that excited, you know it's bad for you, the boy didn't mean anything. . . ." Her eyes signalled for Wade to leave. He was half-way to the door when his grandfather's voice, wheezing and jagged, stopped him.

"Just a minute, boy. You think I don't know that you kept on with that stuff you call painting. The hell I don't—" wheeze, wheeze, "—carry on cultural heritage . . . must preserve—" wheeze, "—no composition or values or even geometric grouping. . . ."

"Now, Father, just sit quietly for a few minutes and you'll be all right. Thekla, bring a dipper of water. There, that's better, just sit still."

" . . . perverting sacred trust. . . ." he began coughing hard.

Wade made his escape.

§ § §

All morning he hoed non-potatoes, savagely driving his hoe deeper than necessary into the spongy wet earth. In the afternoon he cut kirilwood, choosing trees set far enough into the ravines to require much heaving and pulling. By evening Wade's back muscles ached all the way to the base of his skull, but he felt that he had control enough of himself to return to the cabin. Still, he was aware that somewhere, deep inside, his resentment was only precariously banked.

The sunset damped it down a little more. He watched the fading light raptly, leaning on his ax, his eyes glued to the soggy clouds glimpsed through the mist as they shaded from gray to tlem to slate and all the way to a delicate kipney. The fog carried the mingled smells of rainplant, decaying wet leaves, and the pungent richness of cut kirilwood.

It won't all get into even this last painting, he thought with a curious mixture of gratitude and despair. No artist could get it all—not even me, damn it. The shaded softness, the grayness, the—the *rightness* of the way it looks just before dark. God, the world is so damn beautiful.

He shifted a little, gingerly flexing his cramped muscles, keeping his eyes turned upwards to the foggy sky, and the gray lichens beneath his boots crunched softly. He bent over and carefully scraped them off the rocks. What if he powdered them, maybe adding a little thinned river clay—would they mix into that silvery shade of tlem?

He began to whistle a wordless, excited little tune, unaware that he did so, as he intently rubbed the gray lichens into the back of his hand and squinted at the resulting shades. He didn't see the figure gliding through the fog, until his mother materialized next to him.

"Wade? Are you all right?"

All his life, that had been her greeting—a tentative request for reassurance, made as though she questioned her own right to ask it. Incongruously, Wade thought of the three headstones in the little cemetery with "Beloved Child of Janice" on them, as well as that other one bearing the name of the man assigned to sire two of them and Wade himself.

"Yes, Mother, I'm all right." He half-held out his lichen-colored hand, then drew it back. Better show Thekla instead.

They were silent, smelling the wet air, watching the way the gray mist softened the tools leaning against the stone cabin. Simple tools, simply made; the improvisations of a pioneer society starting over.

"He's very old, Wade. You don't always remember that," his mother said abruptly. Wade said nothing, his lips pressed tightly. Somewhere among the rocks a non-frog shrilled: kee-day, kee-day.

"Eighty-three, by that reckoning system he insists on using." Her voice was softer now, pleading, almost apologetic. "Eighty-three, and the last one left. We can't know what it was like for them, Wade. Leaving behind them a world on the edge of war, taking all those books and art treasures with them to the only place of safety left, and then, after sleeping all those years—" he caught the little stumble in her voice, the psychological balk at hurdling the illogical concept, "—to miss it by so little."

"Oh, Mother, it's not so little," Wade said impatiently. "It's a whole planet away! A whole different world!"

His mother sighed. "I know it seems that way to us. But after they traveled all that way—nine 'light years'—" again that little stumble, "—being just one planet away *seems* like a little. I guess."

She stared at the darkening clouds, behind which were—somewhere—that just-missed Earth-like world, with its flourishing commemorative colony, New Earth. Behind them, too, was the sun, which the grandfather insisted they refer to as "Beta Hydri," and all the other unimaginable "stars." Wade fidgeted impatiently. If he mixed the powdered lichens with a little pale kipney—

"You know, when I was a little girl," his mother went on, "and all of the Five Survivors were alive, I would hear them have the same conversation over and over. I used to wonder why it was so interesting to them. Mother would wail about all the books and paintings that were destroyed in the Crash. Uncle Peter would shake his head and say how much they would have meant to New Earth. Then Father would brace his shoulders—I know you don't remember him strong and healthy, Wade, but I do—and say in a deep, artificial voice, 'If you were marooned on a desert island and could only take one book . . .' The others would laugh, but not happily, and Father would add, 'But we've got five of them. Well, four decent ones, anyway. A whole culture!' and then Aunt Alia would simper and say that it wouldn't have meant so much without a real artist and art historian like Professor James Strickland to help pass on that culture, and that even though New Earth had suffered his loss, it was Exile's gain."

Wade shifted his weight from one foot to the other. It was growing very dark. His mother reached up her hands and rested them on his shoulders.

"He's not well, Wade. He never leaves the fire anymore, and he can't bear to even look outside—and even close to the fire he coughs from the damp. And these scenes just upset him so. Yes, I know, you kept your temper this morning, but what about yesterday, or the day before? It can't be much longer. Please, Wade."

"Please what?" he asked through suddenly stiff lips.

"Please don't paint those gray-mist pictures anymore. Paint the way he needs you to."

"I can't!"

"Then don't paint at all. Please. I can say they need everyone for some harvest emergency or other; he can't keep track of the work any more."

Not to paint. Not to feel the smoothness of the whittled brush handle between your fingers, and the power flow down your arm, and the ultimate, wholly enormous satisfaction of the subtle shades drifting over the kirilwood board seemingly without even touching it and the. . .

"Please, Wade. It means so much to him, this passing on of a heritage. It's all that's kept him going, that's carried him—and all of us with him, don't you ever forget that—this far."

Her face was completely obscured. He put out a finger and touched the worn cheeks, the skin still soft from the eternal damp but hollowed out, stretched tautly in the contours of a face that

had looked steadily at backbreaking work and compulsory childbearing and the thin edge of survival every day of her life, with no space for the luxury of painting that was her son's inheritance from her labor.

"What about you, Mother?" he asked desperately, his voice cracking from its new deep tones upward into a childish wobble. "It's always *him*, everything's always *him*. What about you? Don't you have an opinion about it? What cultural heritage do *you* want me to have?"

She took her hands from his shoulders, and through the sodden darkness her voice was weary with all those weeks and months and years of unbroken work. "I don't know, Wade. I don't have one to give you."

§ § §

He didn't paint. He harvested non-potatoes, and hunted the small, quick glarthen, and cut kirilwood, and didn't paint. He took his turn on the hand loom and helped roof the Ciegler cabin for the winter, and went on a foraging trip to haul rock salt, and didn't paint. In the mild autumn evenings he sat with the others by the fireplace and listened to his grandfather read alien, outlandish plays from Shakespeare or discuss the turn-of-the-century Delineists. While his grandfather talked, Wade made himself keep his eyes focused on the trembling, liver-spotted hands that would never hold a paintbrush again.

Once, almost formally, the old man showed him a seventeenth-century Tohaku in the Book. It was a pine forest, seen through early-morning mist. "See," he quavered, "there's a fog, but the emphasis is still on the trees, the composition and values are preserved. Now if you would use your talent to do something like that, boy, instead of those formless, colorless blobs, it would be part of a great tradition!"

For a moment Wade saw everything red, an ugly livid red that made his body recoil even while his mind winced away from the knowledge that, coming from his grandfather, this was a peace offering. Peace, when it might be years—oh, God, surely not *years*—before he would paint again, and the old man kept on shoving those hard ugly drawings at him and he was probably going to live till a hundred and what kind of a person would *wish* for another human's death? What did that make him?

The grandfather was shrinking back on his bench, clutching the

book and staring at Wade's face. Wade shook his head convulsively, saw his mother fearfully watching him from across the room, and managed to say in a voice that was almost steady, "I wasn't *trying* to paint the way a landscape looks in fog."

There was a long, painful pause. Finally the grandfather dropped his eyes; he hardly spoke to Wade the rest of the winter.

As winter wore on, the usual stretching of provisions began. Wade lost ten pounds and his mother watched him anxiously. In the longer evenings, desperate to put some object into fingers that seemed to constantly curve into the hold for a brush, he tried to help Thekla teach Malki to read. Malki had always come to him, hanging around underfoot and fiddling with his tools, but now she climbed into her mother's lap when Wade fixed her with his flat, tense gaze that seemed to see nothing.

§ § §

The spring came early. The fog lost its winter clamminess and chill, and smelled of new gray-green life and wet dirt. Wade, restless, took to long twilight walks, meandering aimlessly through the dank fog, refusing even Thekla's company. As he walked, he held his right hand firmly imprisoned in his left.

He returned one night well after dark. His mother watched him as he came in, looking as though she were going to urge him again to eat something, but he avoided her eye and climbed up to the sleeping loft. She sighed and went back to helping his grandfather touch up the colors in his Terran landscapes.

"More red in that, Janice," the old man was saying fretfully. "Can't you see it's too drab? The damn fog fades everything. It should be scarlet, or even crimson, damn it."

The loft seemed cramped and suffocating. Wade lay on his pallet and stared at the peak of the kirilwood ceiling, where a non-spider was spinning an intricate gray web. He tossed to his side and examined the weave of the heavy, dull blanket. He lay on his stomach and tried to bring sleep by sheer effort of will. At last he rolled off the pallet and slowly, his calloused fingers trembling a little, opened the little cupboard he himself had built under the low eaves.

They were gone.

A few chips of dried paint shimmered on the rough shelves. His brushes were all there, and the little dippers of the powders he had made, and one thin kirilwood board, painstakingly sanded

but still as yet empty. But the paintings, all of them, were, unbelievably, gone.

"Mother! Thekla! *Malki!*" Wade clattered down the ladder, sprang at the child bent over her lesson slate. "Malki! You were in my things again! What did you do with them, where are they, oh my God—"

Malki squealed and ran for her mother. Wade caught her by the shoulders and started shaking her violently, like a rag doll. Thekla hit at his arms, screaming, and finally her words pierced the red mist in his brain.

"She didn't take them, Wade! She didn't take them! Leave her alone, you're hurting her! Wade! She didn't take them!"

He dropped Malki, who climbed, sobbing, into Thekla's arms. Wade straightened slowly, and slowly, leadenly, his eyes swung to his grandfather.

"No," he whispered, "you couldn't have."

The old man shrank back on his bench. "You weren't painting anything: you have talent only you just don't *use* it, boy; you have an obligation to the colony. . .," he began to sputter, his words slurring together as the quavering, cracked voice rose higher. "You *can* do it, but this damn stinking hell cast a spell on you, and they were holding you back, those other ones, don't you see I *had* to burn them! I had no choice!"

Wade took a step forward, woodenly, feeling his fists clenching themselves at his sides.

"... and who the hell d'you think you are, anyway?" his grandfather shouted, pulling himself up with his stick. "All of us . . . obligation . . . to cult'al heritage . . . memory of Earth. . . ."

"Memory of Earth!" Wade shouted. "My God, I hate the damned place! Earth! What good have your memories of Earth ever done but strangle us! This isn't Earth, it's Keedaithen, and you're just too rotten stubborn to admit it! But I won't go down with you, you hear me, old man? You destroyed my p-paintings," he bent over in a ragged, shuddering sob, then sprang, his face demented, to the fireplace. The grandfather tried to scurry behind the table, but Wade rushed past him. He grabbed the books from their homemade altar and hurled them, one by one, into the fire.

"This is what I think of Earth! My God, my God, all my work—" The Shakespeare hit the center of the flames and sent red sparks leaping. The Bible joined it a second later and the two of them, old and brittle, blazed passionately. A *Thousand Years of Painting* landed a little to one side and began to char, its edges

graying ghoulishly.

The grandfather started forward with a strangled cry, his face dull purple, his eyes bulging from their sockets. Wade began to claw at the walls, ripping the prints into tatters, hurling the paper fragments into the fire. The kirilwood landscapes, more solid, hit the back of the stone fireplace with a dull 'thunk'.

"And this damned memory, and this one, and this one! 'Cultural heritage!' 'Memories of Earth!' Damn the stinking place, it's probably nothing but a pile of rubble by now—"

The old man fell to his knees. Spittle covered his chin and his face was ashen, but he made no sound. He seemed to fall very slowly, his body twisting from the waist, like a feather from a kel bird and floating through the shifting fog, cutting secret little paths that soundlessly closed behind it. When he hit the stone floor there was scarcely a noise at all.

§ § §

The mist hung in dark gray curtains into the oblong hole, filling it, asserting first rights over the kirilwood box that would soon take its place. Wade stood a little apart from the rest, numb with guilt and unexpected grief, isolated less by any action of the others than by his own frozen immobility. A baby whimpered in its mother's arms, was impatiently hushed, and quieted.

Thomas, now the eldest colonist, stepped forward and began the service. He recited it haltingly, hesitating often, and when Wade realized why the man had to rely on his uncertain memory, he moaned softly, an inarticulate keening, unaware that he did so. Thekla put out her hand and gently touched his arm.

"As for man, his days are as grass . . . and . . . as a flower of the field, so he . . . flourisheth."

His mother, dry-eyed, watched Wade anxiously. It began to drizzle.

"For the wind passeth over it, and it is gone, and . . . and . . . the place thereof shall know it no more."

The light rain fell on Wade's face, fragrant with the smell of new grass and wet slate. The frozen immobility cracked a little, began to break up.

Eighty-three years. 'He's not well, Wade. It can't be long.' And time passing, relentless as the squalling clouds, in the unimaginable light-years among those stars he only half-believed in, anyway. 'As a flower of the field.'

But there were no field flowers here, he thought haltingly. None of those garish, over-colored daisies or zinnias or roses in the Impressionist paintings that now existed nowhere in the world. And the wind never passed *over* anything; it got tangled in the mist and the clouds and made beautiful shifting shapes of its own.

Wade unclenched his fists and surreptitiously flexed his hands; the right one began to curve gently. There must be someone, he thought, either among these 48 or yet to come, who could see words as purely as he could see colors. Someone who could write a new funeral service—as well as sonnets, plays, celebrations, all of it—to fit here, and now, on Keedaithen.

A SOLUTION TO THE DEFECTIVE DOYLES (from page 45)

The algorithm uses the binary system. Take 1 doyle from the first can, 2 from the second, 4 from the third, 8 from the fourth, 16 from the fifth, and 32 from the sixth. These numbers, 1, 2, 4, 8, . . . , are powers of 2, and every integer is the sum of a unique set of such powers, provided no two are alike.

Place the 63 doyles on the scale and write down the excess weight in milligrams as a binary number. The position of each 1 in the number, counting from the *right*, identifies a defective can. Example: the excess weight, is 22 milligrams. In binary, $22 = 10110$. Therefore the second, third, and fifth cans hold defective doyles.

Several months later, after a third shipment, the following message came. "Due to computer error, each can contains only two dozen doyles. Any can may be full of defective doyles, each one milligram overweight. Destroy defective doyles."

"The binary system won't work now," said Watts. "It requires 32 doyles from one can, but no can has that many."

Shurl said nothing. He retired to his room where he gave himself an injection of Fermataine, a drug that increases one's ability to do number theory in book margins, and scraped for a while on his musical saw. When he returned he said:

"I've done it again, Watts. One weighing suffices. A most singular solution."

See page 124 for the answer.

THEY'LL DO IT EVERY TIME

by Cam Thornley



At 15, Mr. Thornley is our youngest author—a fact we discovered only after we had agreed to buy this latest entry in the horrible-pun contest. The writer also reports that he and his brother edit a school-oriented newspaper/magazine that is a lot funnier than you would think, and that he is a victim of unrequited love. This is his first sale.

The High Vavoom of Kazowie was in conference with the pilot of the scoutship which had just returned from Sol III.

"I am certain that you have much to tell us of the strange and fascinating ways of the barbaric humanoids, Captain Zot, but—"

"You wouldn't believe it, your Vavoomity! Why, they live indoors! They don't keep slaves! They even—"

"—but after skimming through your log, I have formulated a few questions which should provide the information necessary to determine whether or not the planet is ready for colonization. Now—"

"It's unbelievable, sir! They eat with pieces of metal! The men think they're better than the women! They don't—"

"—now I just want you to answer these questions as briefly and completely as possible. Do you understand?"

"They—"

"Good. First, what was the reaction of the natives upon first sighting you in the air?"

"Well, high sir, at the time I couldn't help noticing the resemblance to a glikihll that has had freem poured on it. The humanoids went into a frenzy and fired several projectiles at me, all of which fell short by several naugafrangs."

"I see. Now please describe your landing."

"Of course, high sir. When I approached the surface of the planet, I noticed that it was covered with wide black strips which appeared to be vehicular routes. As regulations strictly prohibit landing one's craft upon such routes, I looked for a better place to touch down. The only other areas that seemed to fit my craft's landing specifications were the hard-surfaced paths from the doors

of the natives' houses (I will explain this later, high sir) to the vehicular routes.

"I set the ship down on one of these paths and went out to greet the humanoids. They all—"

"Wait a moment. This is extremely important. What was the reaction of the natives upon first seeing you in the flesh? Try to remember everything that happened."

"Yes, high sir. It seems that I bear a striking resemblance to one of their major religious figures. When I came out of the ship all the humanoids in the vicinity knelt and averted their eyes, and said something about the coming seconds. I think this was a reference to an event that was going to happen in the near future. At any rate, when the natives stopped talking they got up and started walking towards me with their arms stretched out in front of them. I didn't like the looks of this so I jumped into the ship and took off. The religious-figure-resemblance theory is strengthened by the fact that when I observed the landing site several weeks later through my reasonable-distance site-viewer I discovered that the natives had built a shrine there which always seemed to be full of pilgrims from many lands."

"Ah, yes. The familiar saviour-from-the-stars syndrome. It happens to every one of our astronauts on pre-colonization planets."

"What's that, high sir?"

"They worship the walk he grounds on."

REJECTION SLIP

A writer will seal his own coffin,
And the interests of readers will soften,
If the author insists
On the usual twists,
And he goes to the Wells once too often.

—Mark Grenier

AFRICAN BLUES

by Paula Smith

Currently a student, a systems analyst, (with this sale ((a first))) a writer, and a part-time bum, or so she tells us, the author claims to have led a sheltered life, never venturing more than 12,000 miles away from home.

"African Blues" is the first story she ever tried to sell, and she is thinking Real Hard about writing another.

Musa's cow, Llana, was eight years old, and I did not think she would be able to calve. But there is was, and she was bearing another one. It was hard for her; she was quite old. Musa had brought her in from the savannah when it became obvious she would have difficulty dropping. He left her at my veterinary barn. "See her through, Sister Doto," he said, "and I will pay up all I owe." This for Musa is a major concession.

That is why I was in my barn before dawn with Llana that day. That was the day the rocket came down over the village. At first it was only a faraway whistle, high and shrill. I thought it was a bird and paid it no mind. There were other things to attend to; Llana is a nasty beast, with a tendency to bite. But then the whistle grew sharper, very quickly, you see; and Llana shuddered for more reason than just her unborn calf. Then bang! came a crash.



For a moment after the crash it was very quiet; even the hyenas shut up their morning howling and the dungbirds stopped screeching. Then half the village was awake, hurrying out of their houses to see what it was. "Llana, you wait for a minute," I said. I wanted to see what this was, and what it was doing here in Kenya. Besides, in the barn it was very close; I also needed some air.

It was early morning, and already quite warm. Here on the equator there are certain days when the sun is so bright and hot that it burns the sky yellow. That is what the people say. The teachers at the missionary school in Nairobi say it is the dust. Certainly there is more than enough of it, a lot of dust in the air because it had not rained in two months. Further, that day the villagers kicked up more running out into the savannah to find the fallen object. The sky was already pale with sunrise, and I knew it would not turn blue that day.

Jama was the first to find it. It was big, bigger than a house. "Is this one of the whites' spaceships?" he said.

"Yes," I answered. It was indeed a rocket; I had seen several on the television in the capital. But it did not look like the Americans' rockets, which are cone-shaped, like our roof-tops. This one was circular, round all the way over, like a ball. There were many wires wrapped around it, and a big—parachute, they call it—only it looked more like a huge ship's sail. It was torn.

The rocket was at the deep end of a long rut it had made in the brush. The villagers began to dig it out—who can tell if such a thing might not be valuable?—and I was thinking I must return to Llana. Then Dr. Hunter, the black American who came to our village two years ago, ran up, sweating. He is always sweating.



He came here because he wanted to be African; but even African water doesn't stay in him, it always sweats away.

"Don't open it!" he yelled in his Kiswahili, which is very bad. Whenever possible I speak English with him. "We'll notify the authorities first. It might be a Russian capsule."

The villagers looked up, and some moved away. Most moved away. Dr. Hunter is sometimes crazy, and often rude, but he is a smart man. He, too, is educated.

Jama walked up to Dr. Hunter and bowed a little. "Your instructions?" he asked in Kiswahili, for that is the only language he knows. I spoke up, using English, "What authorities should we notify, Dr. Hunter? Brother Jama is ready to do what you suggest."

"Also may I borrow his bicycle," Jama said to me. "It's a long way to Lodwar."

"Oh," said Dr. Hunter, blinking a little. "Authorities . . . well—" He started to count off on his fingers. "Well—the District Commissioner, for one. The mayor of Lodwar, the po—"

I almost jumped out of my skin. The rocket had knocked at us. "Get back!" yelled Dr. Hunter, as if we weren't already scattering. The thumping increased, grew louder, stopped. We waited a moment, holding our breaths. A few of the bolder young men started forward. But they halted, and scuttled back when a section of the rocket opened a bit above the ground. At first the door stuck, grating against the jamb, then it wiggled free, coming all the way open. And from inside the rocket, a man crawled up, leaned out, and fell out of the hatch. A *blue* man.

I must admit I was astounded. He was small, slighter even than a white man. He wore a great deal of padding and a thick-looking round helmet, though there was no visor. We hurried forward to take him away from the rocket, for he just lay there. His face was shaped like a top, very round above—especially wide at the eyes, which were closed—tapering to almost nothing for a chin. Dr. Hunter told us, "Take him to my office."

M'bega, his two sons, and Sulimani picked up the little blue man between them and headed off to Dr. Hunter's very large, very beautiful house. (It has a wooden roof.) The doctor himself followed close behind them, going, "Sst! sst! careful there."

I stayed behind for a moment, walking around the rocket. The metal radiated warmth, as did the ground around it. Some of the sand had been turned to glass. The sun was fully up now, shimmering on the huge sail. It wasn't cloth, for I could see no weave,

although it was like a metal fabric. But it didn't reflect quite like metal. I came back to the opening, intending to close the hatch cover, when I heard a scraping inside the rocket. I didn't know, were there more blue people in there? I was most cautious as I peered in. But it was only M'bega's littlest boy, Faki, who grinned at me from a padded chair. "See what I found, Aunt?" he said, holding up a piece of the metal-like cloth. "It was in here," he said, pointing to a little mesh bag fastened on the side of the chair.

"You come out of there," I said, and leaned in to pull him out. The rocket's—cabin, I suppose you would call it—was very cramped, and it was hot, stifling. There were many more boxes and mesh bags, many things tied to the round walls of the cabin. There were three tiny windows—no, they were television screens—on the curve of the wall before the pilot's chair. I put Faki down outside and shooed him on. Then I looked at the long cloth band I had taken from him. Too big for a headpiece and too narrow for anything else, it was smooth, thick, and quite strong. I pulled out the net bag—it had come from off the side of the chair—and closed the hatch.

Admittedly I dawdled going back to my barn. I was curious; what was this cloth for? Why should the blue man have had it nearest him? Well, something had to be nearest, I supposed. But what were these other things in the mesh bag—two pieces of very soft cloth, not metallic; a length of string; a pencil; a small vial; and a bunch of cotton waste. Strange things, but not strange enough to belong with a blue man.

Well, they were getting dusty in my hand. I put them back into the bag and went on. It was growing hotter, with the horizon shimmering all around in the distance. So flat, the savannah, with nothing but the brush and dust standing on it. But do you know, as I swung that bag while I walked, all the dust in it flew out. None of the articles, but only the dust. I looked inside and all the things were clean. It was quite odd. Do you think Europeans have such things?

I came back to my infirmary, went to see whether all was well with Llana. Ah, the poor old cow! As I approached, she was standing in her stall, shuddering in a labor pain. She strained, twitched all down the length of her hide, then relaxed. "Ah, Llana, poor girl, is it hard when you're old?" I leaned against the wooden slats for a very long time. Llana was well, just that the calf was no closer than before. The sun's rays peeped in from the cracks in the southeast corner, lighting motes in the air. It was

dark and still, very quiet, but growing warm even in the shed. The hay smell was thick in the air, too, as thick as the dust outdoors.

Something about the bag's contents—the two kinds of cloth, the pencil, the cotton waste, and the string. And a small vial. It bothered me. I emptied the mesh bag out onto a manger to examine the items. The soft cloth, I found, would stick to itself, and the pencil would cut the string. It would also cut straw in half, but it would not cut my skin. I opened the little bottle, dabbing a bit onto my fingertip. I tasted it—and it was brine! Most unusual.

The silver cloth was a sling; and its edges would hold together, making a sort of small, hollow hammock. It all bothered me. They meant something, I was sure. I felt that. Sometimes, you see, I feel as if I were all the land, that I could hear and smell every thing and every animal that walked across me, that if I could only feel just a little bit more, I should know everything and be perfect. This was the same feeling. If I could only know the why of these curious objects, I felt I should know all about the blue man.

Llana moored very softly. I gathered the things into the bag—again all the dirt fell out—and noted the time. Forty minutes. Her waters had not yet broken, so it would be a long time yet. I thought, and made up my mind. I would go see the blue man. Maybe that would give me my hint.

Outdoors, the sky was already brass, without a cloud. The dust on the short trail to Dr. Hunter's house was stirred up just by my walking, and it settled over me, turning my arms almost as grey as the old bluejeans I was wearing. The bag I tucked under my belt. As I walked, I tied all the little braids of my hair up into a topknot, wrapping them all with my kerchief. My mother had given me the kerchief last winter, before she died. She had made me come back here to the village when I had completed school in Nairobi.

Dr. Hunter's house had been built years before, even before I was born, by a European, Herr Max. The village people had settled around it because he also had an artesian well drilled. There used to be a garden in back, but Dr. Hunter let it die. It is a shame; it was very beautiful.

I knocked on the wooden door and called, "Hodi?" Nobody answered. Again I called, "Hodi? May I come in?"

Then Dr. Hunter's voice said, "Who is it?"

"It is I, Doto," I said. "May I come in?"

There was a click as he unlatched his door. Opening it, he said, "Ka—uh, karibu, Dota. Is Jama back yet?"

"It is unlikely that he would be," I said, walking inside. "It is a very long way to Lodwar. I have come to see the blue man and ask him about his bag," which I held up. "May I see him?"

He simply looked at me, with sweat of more than heat on his brow. There was a cry from further within the house, short, sharp, which caused Dr. Hunter to start. "Dota . . . look, the blue man is sick. He must have been injured in that landing. And I sure as Hell—that is, I may be a doctor, but that doesn't mean I necessarily know how to treat blue Martians."

"Oh. Well; I, too, am trained in medical matters. I was schooled at Corleri Veterinary Institute in the capital, and I believe I may already know what is troubling the blue man. I should like to come in." I made to enter his dispensary, but again he stopped me.

"Dota!" he said. "Can't I make you understand? He is an *alien*—who knows what could be wrong with him? He may have hurt organs whose normal function I couldn't know! The best thing we can do for him is try and get him comfortable until the UN or somebody can get him out of here to better care. Savvy?"

He was gripping my upper arm tightly, his face very close to mine. I do not care for this; it is not respectful. I, too, after all, am educated, perhaps not so much as Dr. Hunter; but even my knowledge of veterinary matters should count for something. And I also had the blue man's bag.

"Dr. Hunter," I said, very calm. "My name is Doto. You keep mispronouncing my name, which is not polite. I have come to see the blue man. I have certain things of his from the rocket which he may be needing. Hodi?"

He stared at me for quite a long time. Plainly he was not happy with this situation, but when the high cry came again, he shook himself, growling, "Oh, come on in. But I'm in charge here, understand that. I don't want some back-country witch doctor fouling up interplanetary relations, y'got that?"

"Of course, Dr. Hunter. You would rather do it yourself," I said, as I went into the infirmary.

In there, on the examining table lay the blue man, awake and looking upwards. His padded suit being off, I could see he was blue all over, except for a sort of short brown pelt of hair over his scalp, apparently across his back, and running down the outside

of his arms to the back of his hands. He had three fingers on each hand. He was quite thin and slight, like a young boy, with a large round head. I came a little closer and he looked at me.

How do I say it? The eyes—large and round, deep and beautiful, beautiful—like ostrich eyes, like a bowl of water reflecting sunlight. They seemed to be black, though they might have been brown. I have never seen eyes like that; I shall not forget them.

Then I looked away, down to the somewhat swollen abdomen under Dr. Hunter's modesty sheet; and everything, the bag, the belly, the sling, fell into place, as my schoolteacher used to say. "Dr. Hunter, would you want me to assist you, then?" I said to the American.

"At what?"

"The delivery. The blue man is with child."

Yes, I do say that surprised Dr. Hunter a little bit. For a long moment he gaped at the blue man, his mouth going like a fish's, until the blue man—she—groaned, gripping the sides of the table to help her bear down with the pain of labor. This brought Dr. Hunter back to himself. He snapped at me, "Move over, girl, get me—where's my stethoscope?" He fit the tips in his ears, put the cup to her belly, muttering, "All the time thought it was a second heart. *Damn!* Sell my soul for a fluoroscope. Such a thing as *too* primitive, Hunter." He flipped out the earpieces and began palpitating the abdomen. The blue man looked on, quiet again. "Oh Lord, oh Lord. Doto, you're right. How'd you know?"

I emptied the wonderful bag out onto the cabinet top. "These are the things she had nearest her—this, string, to tie the cord; this pencil is a clipper, to cut it; diapers, for herself or the child, as is also the cotton waste, for cleaning and swabbing. And this," I held up the silver cloth, "is a sling to hold the baby across her back. Or chest. It is obvious."

"Obvious, Hell," Dr. Hunter said. I tried to overlook the profanity. "How you know some alien's gonna be placental? She surely isn't mammillary, not with that practically concave chest. Genitals don't even approximate human type. Oh Lord, Lord."

"But," I said to him, "what else could it be? She *does*," I pointed it out, "have a navel."

He shook his head, his hand wiping his forehead. "Never mind. I'll accept that as a hypothesis." He looked the blue man up and down a moment, then said, "By the way she's acting, birth is imminent. So, yeah, I'll want you to assist me. Go wash up, put on these," handing me a mask, cap, and gown, "and sterilize these."

He gave me a forceps, speculum, two scalpels, and several clamps. "Wear these gloves."

He turned away as I balanced all these things in my arms. I already knew that one is supposed to do such things; Dr. Hunter, like all Europeans, is quite peremptory. Oh, I felt—but that doesn't matter. It was at that moment that I looked at the blue man again, at the deep, deep eyes . . . and Dr. Hunter's rudeness didn't signify. Had the blue man been a person like me, that look would have been a smile, a smile amidst all her pain. I smiled back.

So, I did as I had been told, coming back shortly with the instruments piled on Dr. Hunter's steel tray. The doctor had closed the blinds to keep out the flies and dust, and set out several clean glass dishes and test tubes. "For samples," he said. He went to wash up as well.

When he returned, he began by filling his glassware with various of the blue man's excretions. From time to time a few drops of violet-colored blood ran from her birth canal, and nothing we did seemed to stop it. The bag of waters had apparently already ruptured, although Dr. Hunter later said he didn't think there had ever been any. The pains were evident and regular, about ten minutes apart. The blue man grunted with each, holding onto my hand or the table as she bore down during the spasms. Time went on like this.

It was very close in the room, quite extremely warm. Dr. Hunter was sweating, I was sweating—even the blue man had sweat beads about her head and neck. I wiped them away and she spoke some words. They made no sense, but then what do you expect from a foreigner? Dr. Hunter listened to her belly with his stethoscope, poked and prodded, but did little else. He did not try to dilate the birth canal, which I certainly would have done by this time. He wouldn't even allow me to give the blue man some water. "We don't know if her system can tolerate real water—let alone the terrestrial organisms contaminating this stuff. God knows what airborne diseases are already infecting her. And anyway, I don't want her to drink because I sure don't need to load up her bladder right now—if she's even got a bladder." Well, that made sense, so I let the matter go.

As time went by, the sun, in its swing about the building, found a crack between the screen and the window frame. It shone in brightly, falling directly onto the blue man's face. Her eyes seemed very sensitive to our light; she squeezed them shut till I

repositioned the blind. "That is the Sun," I said to her. "The Sun. And I am Doto. Do-to." She gazed at me a moment, then said—as nearly as *I* can say it—"Hckvfuhl."

"There!" I said. "That must be her name. Or possibly her country."

Dr. Hunter snorted impolitely. "Me-Man. This-Earth. Sounds more like she's clearing her throat." A moment later, the blue man spasmed again, crying out the loudest she had yet today, and he simply stood there, doing nothing.

I was annoyed. First, at this nasty drip of sweat that had run beneath my mask so *I couldn't* wipe it away; second, at Dr. Hunter. *Mostly* at Dr. Hunter. I said as evenly as I could, "Doctor, she is suffering greatly. There are drugs to relieve pain. Could you not give her a little, just to help?"

Still he did nothing, not even looking at me. Shortly, the blue man's pains ceased.

"Dr. Hunter, I am asking you to help her. Push on her belly, use the forceps, why don't you? Even Juna the midwife would have had this baby born before now. Why, I myself—"

"Oh, shove it!" he yelled at me, while a second pain arose in Hckvfuhl. He turned to me, sweating angrily, and shouted further, "You damn native bitch! What do you know—a horse doctor?! This is an alien, do you understand, an *alien*. You don't know—I don't know the first thing about her, her physiology, or how it functions. You and your African midwife would have had her dead by now." Yet another cry from the blue man distracted him, and he seemed to sweat even more, if possible. "There is nothing I can do but wait and watch. This may even be normal for her species. I'm not about to kill her by fooling around where I'm ignorant. Just don't you give me any flak, girl." And so he let her cry and cry and cry.

After an hour all the pains had slacked off. That is not right, it doesn't happen with people or cattle. I was alarmed that the child might be dead, but Dr. Hunter still reported hearing the fetal heartbeat. There was still that thin trickle of violet blood which would not be stopped, only slowed. Hckvfuhl moaned often from continuous pain, which was the most frightening of all. The eyes were shut tight.

Eventually it neared sunset. As the sun rimmed the unshaded window on the west side, it grew slightly cooler, quieter as both the insects and the village prepared for nightfall. It comes swiftly here. "I am hungry," I said. Dr. Hunter looked up.

"Mm, yeah, so am I. More than that, I need to take a break; and I bet you do, too. I don't think we better eat anything, we don't have time. But you go ahead. Take five minutes, then be right back."

"All right." I removed my mask and cap, peeled off my gloves. Then, as I suddenly recalled, I put my hand to my cheek, saying, "Llana! Her calf—"

"Doto." Dr. Hunter looked at me wearily. "Screw the cow. This is more important."

Well, Musa might not have agreed with him, but no matter. I took the break—oh, a most welcome relief!—pausing also for a small drink of water at the outdoor pump. It was so cool, so good going down into my belly growling of its hunger. I took a few more gulps and my stomach quieted. The sun was touching the horizon, the sky turning from yellow in the east through blue to red in the west. Tomorrow's would be much the same weather as today's.

I returned to the house and re-dressed, with fresh gloves. As I came into the dispensary, to my utter surprise I saw Dr. Hunter helping the blue man to drink from a glass beaker of water. Hckvfuhl drank it thirstily, making smacking sounds like a child, supported on the American's arm. I leaned against the doorway grinning—I confess it—like a monkey and caught Dr. Hunter's eye. He hunched embarrassedly, then shrugged to indicate the liquid. "Distilled," he said. "Shouldn't do any harm. Anyway, she was thirsty."

"Yes," I agreed, making my face *very* sober, as he carefully laid Hckvfuhl back down. He prepared to go, pulling off his gloves and unfastening his mask, saying, "I think we'll be okay if she just doesn't deliver here. It'll be safer for her in Lodwar—or better yet, Nairobi, or even the U.S. I know you meant well for the alien, but I don't want to force her baby. Do you know what I mean?"

"I think I do," I said. I couldn't help responding to the change in this Westerner. For once he seemed to worry about—how to say it, the *person*, not the "political affiliation." Till now, Dr. Hunter, in trying so hard to be "African," somehow failed to be "Brother Hunter." Then I added, "But you could have been more pleasant about it."

"Oh, excuse me," he said exaggeratedly. "Well, maybe today I haven't done things the way you would have liked, but she is still alive, and that's what counts, right? I think we'll just pull this one through, Doto, you and I."

I smiled. "Of course. Was there ever any doubt?"

"None at all." He patted my arm. "Now you be good and make sure the alien stays calm. I'll be going up the road to see if Jama's on the way. Hold the fort till I get back." He winked at me—not respectful, but who could mind now?—and left.

It was beginning to grow dark outside. I peered out past the window blinds at the groundsel trees silhouetted against the twilight sky: short, ugly trees, shaped like a nubby gourd on a stick. The groundsel, and all of the trees, do not grow very tall here, west of Lake Rudolf. There is not much rain.

"Snyagshe." The blue man's word turned me round. She was struggling to sit up, so I helped her. She seemed very tired, and with good reason. The sheet fell away, but it was still too warm to worry about that. Again those lovely eyes shut as she leaned against the wall, squatting on her calves. I sat down opposite her, thinking, how odd it is, that the English word "calf" means both baby cow and lower leg. I had gone from the first to the second all in one day. How utterly amazing. My own were excruciatingly tired.

After a bit I stood to light the kerosene lamp. The flame sat steady on its wick in the still air as I replaced the chimney over it. And it was just about then that the blue man cried out.

A lot of blue-tinged liquid was flooding her thighs; I could see her abdomen pulsing, rippling downward. She stood up straight on her knees, her fingers scrabbling for purchase on the wall behind her; found some, evidently. I was there in front of her in a second, pressing downward on her belly with the palm of my hand; maybe it helped. We pushed and strained together, then a little bit of grey head appeared, and more and more, stuttering outward with the pulses. Hckvfuhl was not crying any longer, but her pants were quick and loud. The baby's head was born, but there it halted.

Yet the rippling went on, and Hckvfuhl still strained against the wall. By now it was quite obvious she was placental, so perhaps the cord was restraining the baby? I felt under the child's almost nonexistent chin, barely able to fit my fingers into the tiny space; the little one was wedged tight. Indeed, it was the cord, wrapped around the neck, like a noose. I pulled it carefully, it gave slightly; pulled it downward over the child's face, it stopped short. I put my right hand under the child's head and strove to shove it back up into the womb just enough to get the umbilicus over the crown. Over its head, and then freed, the child slid out

into my hands like a wet seed.

The rest was simple. The baby breathed, the cord was tied, the afterbirth came. I cleaned the child off, and Hckvfuhl as well, then carried her into Dr. Hunter's own bedroom to sleep. It was necessary; I wasn't going to allow the blue man to sleep on that mess in the infirmary. She was very light in my arms.

I brought the baby to her, with the lamp and the marvelous mesh bag; and we clothed it. It appeared to be a girl; at least, that's my guess, and it is worth that of anyone else. The baby—hummed, sort of, as we fastened the silver sling around her. It, too, had those beautiful big eyes, open already. Hckvfuhl anointed her little head with the brine from the vial. It was the most beautiful blue baby I have ever seen.

When we were done, I reached for the lamp I had set on the nightstand. Hckvfuhl lay back on the white pillow, watching me. Strange, how those eyes could catch the least ray of light, reflect the lamp like ten lamps in the night. Her hand came up, brushing the back of mine, three blue fingers against my five black ones. "Dto-dto," she said. "Khhon." A moment passed, then I left.

Well, that is what happened the day the rocket landed. Almost as soon as I emerged from the bedroom, Dr. Hunter, Brother Jama, the District Commissioner, and all the official people arrived to take Hckvfuhl off to Nairobi; and I never saw her any more. I do understand, though, that she and her daughter are well, wherever they are.

Of course, Dr. Hunter was annoyed at me for not stopping the child's birth—as if I could stop the moon and the stars, too. But he got over it when the newspapers in the capital called him a "Statue of Liberty in the savannah," keeping Hckvfuhl's "fragile spark alight." They printed my name, too.

Oh, and finally, yes, Llana came through without me well enough. Twice as well, in fact; astoundingly, she managed to produce twins. And what do you know, stingy old Musa even did pay up all that he owed.



THE SF CONVENTIONAL CALENDAR

by Erwin S. Strauss

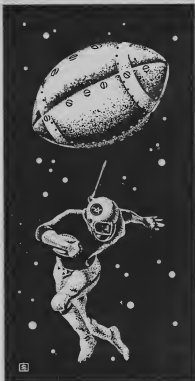
Since we're getting into the slow season for cons, I'll use this space to answer some common questions about cons. The most often asked is why people go to cons—what do they do there? Some go mainly to hear the speakers and get an "inside" look at SF. Others come to look at and buy SF art; or to buy, sell, and trade old and new books, magazines, and other SF artifacts. Still others come for the room-party crawling, rubbing (and bending) elbows with the great and near-great of SF—and fellow fans. Then there's filksinging—science fictional folksinging. I go to cons to do all these things, but my special favorite is filksinging (for a sample of filksongs, send a self-addressed, stamped envelope [SASE] to the address below).

A frequent question is why I list phone numbers rather than addresses. This list goes to press months in advance, and a lot can happen since: cons cancelled; dates, hotels—even cities—changed. Making people phone first ensures they'll base their travel plans on the latest information. The long lead time is also a good reason to send your SASE to Strauss, 9909 Good Luck Road, T2, Lanham, MD 20801 for the long con list (updated bimonthly). That's also the address to send information about cons for inclusion here.

ChattaCon III, Jan. 6-8, \$7, Chattanooga, TN.	(615) 756-5150
ConFusion Pi, Jan. 13-15, \$7, Ann Arbor, MI.	(313) 971-8721
Roc★Kon, Feb. 10-12, Little Rock, AR.	(501) 568-0938
Boskone 15, Feb. 17-19, \$6, Boston, MA	(617) 224-2679
WisCon, Feb. 17-19, \$5, Madison, WI.	(608) 255-9945
LunaCon, Feb. 24-26, \$7.50, Hasbrouck Hts., NJ.	(212) 871-0646
DesertCon VI, March 4-6, \$5, Tucson, AZ.	(602) 884-7996
OrangeCon, March 17-19, \$7, Orlando, FL.	(305) 275-5957
BaltiCon 12, March 24-26, Baltimore, MD.	(301) 776-1165
WesterCon, July 1-4, \$7, Los Angeles, CA.	(213) 838-0297
IguanaCon, August 30-Sept. 8, \$15, Phoenix, AZ.	36th World
SF Convention. Join now before rates go up.	(602) 274-2011

THE THRILL OF VICTORY

by Jack C. Haldeman II



Mr. Haldeman reports that he has continued his southern migration by moving some 40 miles south to an area of partial civilization. He calculates it will take him another 35 years to reach Key West, at which time he will run out of roads and will have to try something else. He further reports that the family acquired three dogs along the way and the cat population has increased to five. Previous occupations include biological researcher, medical technologist, and printer's devil.

The crowd roared when they broke the huddle. Bronco signaled for quiet, but knew he wouldn't get it. Thirty seconds to go and the fans were wired up tighter than a drum. He settled down behind the center, Bubba, and sized up the defense with a cold sweep of his eyes. Third and five, four points down—they *needed* this one.

"Red Split, Five Two," he barked, changing the play at the line. "Hut, Hut . . ." relays snapped in his brain, "...*HUT!*"

Bubba snapped the ball firmly into his waiting hands, and Bronco backpedaled into the pocket, watching the receivers run their patterns. Red was covered, but Bulldog had a full two steps

on his man. Bronco cocked his arm and let the pigskin fly. It was a beautiful pass, straight as an arrow, but he had waited a second too long and his protection had crumbled. A quarter ton of frustrated defensive lineman was barreling down on him. Bronco rolled to his left. It didn't help. The lineman hit him hard. It was a cheap shot.

He knocked Bronco's head off.

The referee threw a red flag in the air and somewhere a whistle blew.

Bronco's head stopped rolling on the thirty yard line.

The visitors drew a fifteen yard penalty for unnecessary roughness, and a time out was called while the team mechanic screwed Bronco's head back on. They had good field position. First down, too.

Two plays later, Bronco hit Bolinski in the corner of the end zone just as the clock ran out. The fans went wild, kids swarmed onto the field. They'd done it! The impossible had happened. The Daytona Beach Armadillos had won their division and for the first time in their sixty-three year history were headed—wonder of wonders—to the *Super Bowl*! It was the climax of a fairy tale season: from the cellar to the top in one short year, a dream come true. There'd be wild parties in the condominiums tonight!

Bronco just stood there dazed, unable to take it all in. His vision was still blurry and his left arm creaked. Something was buzzing in his chest. It had been a tough four quarters, no doubt about that. He turned for the sidelines.

"We're number one!" screamed a kid, waving a finger in Bronco's face.

"Guess we are, young fella," said Bronco, reaching down and mussing the boy's hair. "Guess we are." They both broke into wide grins and Bronco ran down the ramp to the dressing room. Someone patted him on the back. It felt *good* to win.

The locker room was a riot. Owners, coaches, mechanics, programmers and reporters were showering each other with champagne, patting each other on the back. It was one happy day. Only the players showed any calm at all. Robots weren't supposed to get excited.

But it felt *good* to win.

One of the reporters came up to Bronco. It was Julius W. Hawkline, usually called the Hawk. He was sporting a new wooden nose. How he lost his original nose is another story. He stuck a mike in Bronco's face.

"You were great out there, Bronco," said the Hawk.

"Great," said Bronco. He flexed his left arm. It creaked.

"A fine day for Daytona Beach," said the Hawk. "A fine day for sports, a fine day for the U.S. of A."

"Fine day," repeated Bronco, whose speech center was beginning to short circuit. He tried to inch away from the Hawk towards the head mechanic. No one ever escaped the Hawk.

"You took a real beating out there," said the Hawk, cutting in front of Bronco.

"Real beating," echoed Bronco. The buzzing in his chest was beginning to fizz.

"Does it hurt?" asked the Hawk.

"It hurt," said Bronco as smoke started to drift from his ears. He fell on his face with a clank.

The Hawk grinned as the head mechanic rushed over. He had just captured another network exclusive.

The mechanic flipped open Bronco's chest and removed a smoldering circuit board. It looked bad, but not fatal. He'd have to be re-programmed. He handed the circuit board to Stanford Lennox, the team owner, who handed it to Lee Carroll, the head programmer, who handed it to Gipley Feedback, the junior programmer.

"Take care of this," said Carroll. Gipley took the offending part, dug in his black bag and produced a replacement. It wasn't the best he could do, but it would serve for now. He'd make a better one later.

"Fix him up good now," said Lennox. "He has to do a shaving commercial tomorrow." Bronco couldn't grow whiskers, but he sure could sell razor blades.

Gipley nodded. The program would easily take care of that. He'd have to go over all the players before the Super Bowl, anyway. *The Super Bowl*—imagine that. He was awed by a sudden sense of wonder to be following in the footsteps of Don Shula and Vince Lombardi. He slipped the circuit board back into place, closed the flap on the robot's chest. Bronco clicked back into life and winked at Gipley. Yes, things were going to be all right.

Bronco stood up and allowed himself to be photographed in a variety of stupid positions; pouring champagne over a teammate's head, being dunked into the shower. It felt kind of dumb, but it was all part of the game. He was drying off when they came to the door.

Somber and sober, the two men stood in the doorway. They sure

hadn't come for the party. Bronco could smell trouble a mile away and right now he was getting a sniff of real disaster.

Likewise, the Hawk could smell news before it happened. He stepped up and signaled his cameraman to keep cranking.

"National Football League representatives," said the taller of the two, flashing a laminated ID card. "Applegate's the name, Internal Security Division. This here's Blair Potts, my assistant." The other man nodded and a sudden hush fell over the room. Gippley Feedback started inching toward the back door.

The Hawk was delighted. This was not only trouble, it was Big Trouble. Maybe a recruiting scandal, or perhaps a manufacturing violation. Worth at least three minutes on the late news.

Bronco winced. He could see it coming.

"Can I help you?" Stanford Lennox stepped forward, extending a hand that was ignored. "I'm owner of the Armadillos."

"We're investigating what appears to be an irregularity. We suspect a serious violation of NFL rules."

"Simply not possible," said Lennox firmly. "We run a tight ship here."

"Oh yeah? Then how do you explain a ten and two season?" asked Applegate.

"We were good," answered Lennx. "Ask anybody."

"Too good," said Applegate. "Only two losses. Have you forgotten the Rozelle Regulation?" He placed his hand on his heart. The room fell silent. They all said it with him.

"On any given Sunday any team in the league can beat any other team. Amen."

There were tears in Applegate's eyes. He was not alone in that respect. It was one of the holy tenets of the NFL. It was inviolate.

"Surely you can't think—" stammered Lennox.

"An eight and four season we might have overlooked, maybe even a nine and three, if you'd stumbled a little. But a ten and two is just too much. It caught our attention. You almost went *undefeated*."

"We were good," shouted Lennox. "And when we weren't, we were lucky."

"It usually works out," explained Applegate, "that a team will win most of its home games and lose most of the away ones. That way the home town crowd doesn't get disappointed. We allow, however, a little leeway, but you have created an imbalance that is hard to account for. You won *four* away games—think of all those upset home fans. You wrecked their days."

"And the plays," interjected Potts. "Just look at the plays. Always the unexpected. Take that fake punt on third and long that won the game against the Yeehaw Junction Toads. Unorthodox. Just not in the books. Your team has been full of last minute heroics. They're not being methodical at all. Instead of grinding out the yards, they make spectacular plays, come from behind victories. Instead of behaving like football players, they're behaving like men. It's almost as if they had . . . the will to win!"

Lennox gasped. It was impossible, unthinkable. He turned and glared at Carroll.

Lee Carroll looked shocked. "I just take care of the basics," he stammered. "Gipley does the day-to-day stuff."

It was too late. Even Gipley could see that. He hadn't made it to the door and the two men were advancing on him. Carroll was opening Bolinski's chest. It wouldn't stand close inspection, none of them would. He hesitated a moment, just a moment, then he straightened up. Time to take it like a man.

"How about Joe Namath?" he shouted at the two men.

They stopped short, stared at him. "What about him?"

"I've seen the films, I've lived them—the games and spirit of the old days. Joe Namath against the Colts in the Super Bowl. Who could forget the drive, the emotion of the Jets as they proved, once and for all, that a football team is more than just eleven players on a field? It's spirit, drive, and yes—the will to win: to work harder and be better than the next guy.

"That's unAmerican," said Potts.

"That's what *you* say. You with your NFL and complicated rule books. You with your laws that say football is too dangerous to be played by humans and must be played by robots. You with your rules that make every team just like every other team. You've killed the sport. It's dying."

"You admit it?" asked Applegate, advancing with handcuffs.

"I admit to giving the game back to the fans, the players; taking it away from you and your rule books. And I'm glad to have done it."

The Hawk was like a fox in a hen house. This would be worth *five* minutes on the news.

"Here it is," yelled Carroll as they slapped the cuffs on Gipley. "A will to win circuit buried beneath the storage unit for the running plays. We'll have them all out before the Super Bowl. We'll have them playing just like everybody else."

Bronco managed a wry grin. They'd found the will to win cir-

cuit, but they'd never find the important one. Buried deep in his chest, like all the others on the team, was heart, desire, emotion. Stuck in there next to his plutonium power source, it would go undetected. Gipley had put it there, good old Gipley. They were taking him away. But Bronco knew himself and he knew his teammates, fine men every one of them, even if they were robots. They'd give their all in the Super Bowl, they'd pull it off for poor Gipley. Yes, they'd win this one for the Gipper!

A SECOND SOLUTION TO THE DEFECTIVE DOYLES

(from page 103)

From the six cans remove 11, 17, 20, 22, 23, and 24 doyles. Every subset of these six numbers has a different sum. This makes it easy to identify all defective cans in one weighing. For instance, suppose the scale registers an overweight of 53 milligrams. The only way to obtain 53, as a sum of distinct numbers in the set of six, is $11 + 20 + 22$. This shows that cans one, three, and four hold the overweight doyles.

CURRENT SCIENCE FICTION HARDCOVERS

AUTHOR	TITLE	PUBLISHER	PRICE	ON SALE
Ernstrom, Robert	ENCOUNTER PROGRAM	Doubleday & Co., Inc.	\$7.95	12/2
Ferman, Edward L.	THE BEST FROM FANTASY AND SCIENCE FICTION— 22nd Series	Doubleday & Co., Inc.	7.95	12/9

CURRENT SCIENCE FICTION PAPERBACKS

Adlard, Mark	INTERFACE	Ace Books	1.50	1/2
McKenna, Richard	CASEY AGONISTES	Ace Books	1.50	1/2

Titles and Data Supplied by the Publishers

ON BOOKS

by Charles N. Brown

Books to be reviewed by Mr. Brown should be sent—as advance galleys when at all possible, followed by finished books—to him at Box 13124, Oakland CA 94661. He and his wife Dena also edit and publish Locus, the newspaper of the science fiction field; subscriptions to this excellent journal, \$6.00 for 12 issues, may be ordered from Locus Publications, Box 3938, San Francisco CA 94119.

- In the Ocean of Night* by Gregory Benford: Dial/James Wade, 1977, 352pp., \$8.95.
- The Dark Design* by Philip Jose Farmer: Berkley/Putnam, 1977, 416pp., \$9.95.
- The Forbidden Tower* by Marion Zimmer Bradley: DAW, 1977, 368pp., \$1.95 (paper).
- Cirque* by Terry Carr: Bobbs-Merrill, 1977, 187pp., \$8.95.
- A Little Knowledge* by Michael Bishop: Berkley/Putnam, 1977, 293pp., \$8.95.
- Stormbringer* by Michael Moorcock: DAW, 1977, 220pp., \$1.50 (paper).
- The Ice Schooner* by Michael Moorcock: Harper & Row, 1977, 183 pp., \$8.95.
- The Best Science Fiction of the Year #6* edited by Terry Carr: Holt, Rinehart and Winston, 1977, 387pp., \$9.95; Del Rey/Ballantine, 1977, 387pp., \$1.95 (paper).
- The 1977 Annual World's Best SF* edited by Donald A. Wollheim: DAW, 1977, 280pp., \$1.75 (paper); Science Fiction Book Club, 1977, 279pp., \$2.49.
- Best Science Fiction Stories of the Year: Sixth Annual Collection* edited by Gardner Dozois: Dutton, 1977, 184pp., \$8.95.
- Lord Foul's Bane* by Stephen R. Donaldson: Science Fiction Book Club, 1977, 404pp., \$2.98; Holt, Rinehart and Winston, 1977, 369pp., \$10.00.
- The Illearth War* by Stephen R. Donaldson: Holt, Rinehart and Winston, 1977, 407pp., \$10.00.

The Power That Preserves by Stephen R. Donaldson: Holt, Rinehart and Winston, 1977, 379pp., \$10.00.

Earthsea by Ursula Le Guin: Gollancz, 1977, 557pp., £4.25.

Tolkien: The Authorized Biography by Humphrey Carpenter: Houghton Mifflin, 1977, 287pp., \$10.00.

Queens Walk in the Dusk by Thomas Burnett Swann: Heritage, 1977, 140pp., \$15.00.

Once Upon A Time edited by David Larkin: Peacock/Bantam, 1976, 44 color plates, \$6.95 (paper).

The Land of Froud edited by David Larkin: Peacock/Bantam, 1977, 46 color plates, \$7.95 (paper).

The Dream of X by William Hope Hodgson: Grant, 1977, 140pp., \$15.00.

Pieces of *In the Ocean of Night* by Gregory Benford have been appearing in magazines over the last five years; but make no mistake about it, this is *not* a collection but a fully integrated novel. The rewrite is masterful, the plotting powerful, and the lead characters well drawn. In fact, in a couple of places, they're so well drawn that they slow down the pace a bit. Benford's picture of the next forty years is neither better or worse than the world today, but an exciting place to live. This one deserves award nominations.

The Dark Design by Philip Jose Farmer, the third book in the "Riverworld" series, has been the most anticipated volume in science fiction. The first two volumes in the series, *To Your Scattered Bodies Go* and *The Fabulous Riverboat*, were both published in 1971 (the first one won the Hugo for that year); and the third and final book was promised for the following year. Well, here it is five years later and I've got some good news and some bad news for you. The good news is that the book has not only finally appeared, but is 200,000 words long—a triple novel. The bad news is that it ends in the middle of a battle and you will have to wait for a promised *fourth* volume which may be even longer (it exists in first draft only at this time). Unlike the first two (which you may have to go back and reread if your memory is no better than mine), *Dark Design* has no single hero, but follows a whole series of characters in alternate chapters with cliff hanging endings *à la* Edgar Rice Burroughs. Since it's a middle book in a series, nothing is solved; and—in fact—nearly every conclusion from parts one and two proves to be wrong. Farmer is a good enough adventure writer to keep one reading even through a book this long,

but I was somewhat disappointed. The writing is awfully sloppy for something that took years to produce, and some of the logic and technological background make no sense at all. It reads like a first draft and needs some cutting, tightening, and explanations for some of the kitchen sink effects. On the whole, though, it's certainly worth reading.

I don't usually review books I didn't care for in this column because there are too many good (if not great) books for the space available; but when an author whom I usually like turns out a bad book, it's time to complain. *The Forbidden Tower* by Marion Zimmer Bradley, the latest novel in her "Darkover" series, is a long, plotless, non-adventure story in which the author rides her views of love, sex, and marriage into the ground by constantly repeating them *ad nauseum*. She seems to need to tell us everything three times instead of just once, and only the last few chapters have any action at all. There's nothing "wrong" with the views and philosophy expressed, but they needed to be integrated into a story the way they were in *The Heritage of Hastur*. Skip this one.

Terry Carr is best known as an editor although he has also written a handful of excellent short stories. *Cirque* is his first novel, if you disregard (as the author seems to) half of a 1963 Ace Double and a pseudonymous collaboration with Ted White. I wish he'd find time to write more. *Cirque* isn't a perfect novel by any means. Carr can't seem to make up his mind whether he's writing science fiction or mystic symbolism, and the symbols seem to win in its "All You Need Is Love" 1968 flower children ending; but the writing is warm and vivid; the description of Cirque, the city, is excellent; the characterization is extremely good; and the alien is splendid. All it needed was a better ending.

A Little Knowledge is Michael Bishop's best novel to date. The writing is smooth, the characterization strong, and—unlike his earlier novels—the background is vivid and believable. The pacing is still a bit too slow, but only in spots. This is sort of a sequel to Bishop's prizewinning story, "The Samurai and the Willows"; and the added background from the earlier story helped my enjoyment. I hope Bishop continues to use this background of a future Atlanta. Recommended.

Michael Moorcock has been rewriting his earlier fantasy novels for DAW Books with excellent results. *Stormbringer*, the last of the "Elric" stories, doesn't seem to be very different from the 1965 version, but is still a fitting end to an excellent fantasy series.

Now Moorcock has turned to his science fiction novels; and the results are, if possible, even better. His rewrite of *The Ice Schooner*, a 1969 paperback original, has turned it into a major science fiction novel. Don't miss this one.

There are now three "best of the year" volumes published (down from four last year). *The Best Science Fiction of the Year* #6 edited by Terry Carr is the longest and best with four stories I consider excellent: "I See You" by Damon Knight, "The Phantom of Kansas" by John Varley, "Seeing" by Harlan Ellison, and "The Bicentennial Man" by Isaac Asimov. There are seven others, including four I'd rate as "B" and only three I didn't care for. *The 1977 Annual World's Best SF* edited by Donald Wollheim is nearly as good with six of the ten stories rates "B" or better. The Asimov and Knight stories also appear here as do two other "A" stories, "Appearance of Life" by Brian W. Aldiss and "The Hertford Manuscript" by Richard Cowper. *Best Science Fiction Stories of the Year: Sixth Annual Collection* has a new editor, Gardner Dozois, replacing Lester del Rey. I'd rate only two of the eight stories as excellent, "The Samurai and the Willows" by Michael Bishop and "The Diary of the Rose" by Ursula K. Le Guin. There is also a good summary of the year. (There's also one in the Carr volume, but I'm prejudiced since I wrote it.) On the whole, all three volumes are worth having although you should probably wait for the paperback on the Dozois book.

I normally try to stick to straight science fiction in this column, but there's no denying that 1977 has been the year of the fantasy novel. As I write this, there are books due by both J. R. R. Tolkien and T. H. White (I'll try to review them next issue), *The Sword of Shanarra* is still on the best seller list, and there are at least half a dozen new novels still unread.

The Chronicles of Thomas Covenant; the Unbeliever is the overall title of a trilogy by new author Stephen R. Donaldson. The individual titles are *Lord Foul's Bane*, *The Illearth War*, and *The Power that Preserves*. I loved the whole thing and recommend it without reservation. The trilogy will be compared to Tolkien, of course, since it's nearly impossible to write a huge epic fantasy without echoing him; but I don't think Donaldson comes out badly in the comparison. Once you get past a slow start (just like Tolkien), the language becomes elegant, the plotting satisfactory, and the characters interesting. I read the entire 1100 pages of small print with the minimum of breaks and still wished for more. (Donaldson is apparently working on another trilogy.) The middle

book of a trilogy is usually the weakest since it contains neither the original concept nor the conclusion. This isn't true here. Donaldson sets his three volumes years apart, and all have conclusions of their own. I can remember the year-long wait between publication of the second and third volumes of *The Lord of the Rings*, and applaud Holt for releasing the entire Donaldson trilogy at one time. The Holt edition also has a readable type face (unlike the book club editions) and should remain a saleable item even after Ballantine (the book was originally purchased by Ballantine/Del Rey Books who sold hardcover rights to Holt) issues a paperback late in 1978. It's a trilogy that belongs in hardcover on your permanent shelf.

Speaking of the permanent shelf, Gollancz has issued a one volume hardcover of Ursula Le Guin's *Earthsea* trilogy, the one major epic fantasy of the modern era which does *not* echo Tolkien. This book impresses me more and more each time I reread it; and, if you didn't get the original three hard-covers when they appeared, it may be worth the time and trouble to get this bargain British volume. Try the specialized science fiction bookstores.

I was very disappointed in *Tolkien* by Humphrey Carpenter, the "authorized" biography. Apparently, "authorized" in this case seems to mean that Carpenter, who had access to Tolkien's papers, wrote only from those papers and the viewpoints of Tolkien's family. The book has much of interest concerning Tolkien's early life; but the section from 1949, when *The Lord of the Rings* was finished, to 1968, when Tolkien became a cult figure, is under thirty pages. Carpenter doesn't seem to have bothered to check the background of the Ace controversy or the Tolkien Society of America or any of the other things which happened here in the United States. There are a couple of new facts, but not enough to justify the price if, like me, you're mainly interested in Tolkien the writer.

Queens Walk in the Dusk was the last novel Thomas Burnett Swann completed before his untimely death in 1976. It's one of his finest fantasies and is set in that half mythical, half historical Mediterranean period which Swann made uniquely his own. The story, like most of his work, is a retelling from classic mythology; this time it's the legend of Aeneas and Dido. It's the first part of a trilogy with *Green Phoenix* and *Lady of the Bees*. This numbered, 2,000-copy, first edition, with tipped in color illustrations by Jeff Jones and a biography/bibliography by Jerry Page, is a must for Swann fans and book collectors. It will probably not be available

in the bookstores, so write directly to the publisher, Heritage Press, Box 721, Forest Park GA 30050.

Brian Froud (rhymes with proud) is the best fantasy illustrator working today and the logical inheritor of the mantle of Arthur Rackham. I first saw his work in last year's outstanding, color illustrated book *Once Upon a Time* edited by David Larkin; I was overwhelmed by what has to be this year's outstanding volume, *The Land of Froud*, also edited by David Larkin. If you're unfamiliar with Rackham, but remember with fondness the gnomes and other strange figures of Ed Cartier, you'll also love this. If you're as impressed by it as I am, write to Peacock Press, Bearsville NY 12409, and ask to join the Proud of Froud Society. They'll send you a button, a membership card, and other items on Froud and his work. Also watch for the reproductions and interview coming up in the December issue of *Esquire*.

Stephen E. Fabian, another outstanding science fiction artist, has some of his best color work (14 plates) in *The Dream of X* by William Hope Hodgson, a short version of Hodgson's famous 1912 fantasy, *The Night Land*. Hodgson himself did this 20,000 word condensation of his 200,000 word novel for copyright purposes, as explained in the interesting forward by Sam Moskowitz; but the excellent illustrations and fine bookmaking are all that keeps it from being a mere curiosity. Since it's a specialty item, you may have to order it directly from Donald M. Grant, Publisher, West Kingston RI 02892.

MORE BOOKS

We have asked Mr. Brown not to review books written or edited by our Editorial Director, or those published by our Editor. Instead we shall list a few of their most active titles from time to time.

Of the approximately 150 books of Dr. Asimov's now in print, these are recent ones he feels are important:

SCIENCE FICTION

Hugo Winners, Volume Three (Doubleday, 1977).

The Bicentennial Man and Other Stories (Doubleday, 1976).

Buy Jupiter and Other Stories (Doubleday, 1975).

MYSTERY FICTION

More Tales of the Black Widowers (Doubleday, 1976).

Murder at the ABA (Doubleday, 1976).

Tales of the Black Widowers (Doubleday, 1974).

SCIENCE ESSAYS

The Beginning and the End (Doubleday, 1977).

Asimov on Numbers (Doubleday, 1977).

The Planet That Wasn't (Doubleday, 1976).

Asimov on Physics (Doubleday, 1976).

Science Past—Science Future (Doubleday, 1975).

Of Matters Great and Small (Doubleday, 1975).

SCIENCE

The Collapsing Universe (Walker, 1977).

Alpha Centauri, the Nearest Star (Lothrop, 1976).

The Ends of the Earth (Weybright and Talley, 1975).

Eyes on the Universe (Houghton Mifflin, 1975).

MISCELLANEOUS

Familiar Poems, Annotated (Doubleday, 1976).

Our Federal Union (Houghton Mifflin, 1975).

Earth: Our Crowded Spaceship (John Day, 1974).

Asimov's Annotated Paradise Lost (Doubleday, 1974).

Doing business as Owlswick Press, Mr. Scithers has these books in print:

Science Fiction Handbook, Revised by L. Sprague de Camp & Catherine Crook de Camp (1975).

Tales of Three Hemispheres by Lord Dunsany (1976).

The Tritonian Ring by L. Sprague de Camp (1977).

Tales from Gavagan's Bar by Fletcher Pratt & L. Sprague de Camp (1977).



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Carr, Terry	CIRQUE	Bobbs-Merrill	8.95	6.95
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Donaldson, Stephen R.	THE POWER THAT PRESERVES	Holt, Rinehart & Winston	10.00	8.00
Edited by Dozois, Gardner	BEST SCIENCE FICTION STORIES OF THE YEAR—Sixth Annual Collection	Dutton	8.95	6.95
Farnor, Philip Jose	THE DARK DESIGN	Berkley/Putnam	9.95	7.95
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THE WITCHES OF MANHATTAN

by L. Sprague de Camp

It's a pleasure to report a flurry of activity from Mr. de Camp of late: this tale and "Heretic in a Balloon", from the previous issue of this magazine, will soon appear in hard covers from Doubleday as The Great Fetish. And the first of his Krishna novels, The Queen of Zamba, has just been reprinted by Dale Books, while the newest Krishna novel, The Hostage of Zir, will be out soon from Berkley. Owlswick Press has in press The Ragged Edge of Science and the de Camp & Pratt collection, Tales from Gavan's Bar.



High above the surface of the Medranian Sea, a dark-red hot-air balloon drifted slowly through the skies of the planet Kforri. Inside the balloon's basket, a powerfully built, blond young man turned to the other passenger, a small, grey-haired man, and said: "Damn it, Boert, can't you learned men do something about the speed of the wind? Last time, it got us into trouble by blowing twice as fast as expected. This time, it bids fair to do the same by blowing only half as fast."

Muphrid, Kforri's sun, lay low on the western horizon. Ahead of the balloon, already in shadow, lay the island of Mnaenn.

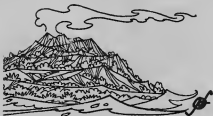
Boert Halran sighed and shrugged. "At this rate, Marko, the convention will be half over before we get there. We have a choice of either coming down on Mnaenn or continuing northwestward and alighting in the sea when our fuel and ballast give out. The former were the obvious choice, were it not for my concern over our reception."

"Why," said Marko, "there's nothing to fear from a handful of fishermen."

"If that were what the Mnaennians are! Didn't you know that it is called the Isle of Witches?"

"Witches? What sort?"

"What they really are like I cannot say. The only visitors they allow are those who come to practice oneiromancy in their Temple of Einstein and to purchase spells and potions."



"What is oneiromancy?"

"Divination by dreams. You sleep in the temple, and next day the witches interpret your dream."

"Do you believe in that sort of thing, Doctor?"

"I think it is superstitious nonsense, but I could be mistaken. There is much about which we cannot issue definitive dicta. Of course, some of the witches' clients are attracted less by the women's alleged magical powers than by the fact that they include, as part of their fee, that the visitor shall be intimate with them."

"Why do they demand that?"

"Because it is an all-female society, and that is their only method of maintaining their numbers."

Marko said: "I shouldn't think many visitors would mind—at least, those who weren't from my country, where moral standards are stricter. But why hasn't some neighboring ruler annexed the island? A handful of women couldn't stop a determined conqueror."

"Ah, but they can. The island is surrounded by tall cliffs, as you can see, with only one or two landing sites. The girls would have ample time to drop boulders on the heads of invaders."

Marko sighed. "They'll probably want to kill us, too, as the Afkans did. They may have something more refined and lingering than a quick chop."

"We talked our way out of the last one," said Halran. "It is not inconceivable that we can do the same here."

"Yes? You know the old saw about taking a jug to the fountain once too often. I seldom get such inspirations."

"We do what we can, not what we would." Halran busied himself with the valve cord. Marko heard the hiss of escaping air. The balloon sank.

The last rays of Muphrid turned scarlet, then purple, as the island waxed before them. The horizon rose to occlude the disk of the luminary.

Marko thought: As a boy he used to imagine traveling to far countries and having fascinating adventures, like those in children's stories. Well, ever since he had escaped from the jail in Skudra, where he had been put for teaching Descensi nism—the heretical doctrine that man had come to Kfori from some other planet—he had been traveling and having adventures. In Afka, which he and Halran had just left, they had nearly lost their heads.

Real adventures, Marko decided, were seldom so picturesque, sanitary, and enjoyable as those of the stories. In fact, he was get-

ting fed up with them. He would like, for a change, to settle down to a dull, safe, orderly, prosaic sort of life. The prospects for such a life, however, did not look good at the moment.

Towards the center of the island, a group of structures came into view in the twilight. Dominating the group was a domed building of sacerdotal monumentality. Around the houses stretched the plateau, an irregular surface broken by a few dwarf stupas, mostly growing between patches of cultivation.

Marko said: "Doctor, I'm not sure the wind will take us over the top of that tableland. It may take us to the left of the island."

"I am not positive, either," replied the philosopher. "If I knew definitely that we should miss the cliffs, I should set us down in the water and try to swim to the landing place."

He pointed to a tiny stretch of beach, whence a path cut in the cliffside led about halfway up the cliffs. There it ended on a ledge. Directly above the ledge, on the edge of the cliff, Marko saw what looked like a rope ladder rolled up on a reel. He stared down at the water, where choppy waves smashed against the base of the cliff, and said:

"I was the best swimmer in Skudra, but I don't think I could live through that. That water's rougher than it looks from up here."

"We don't realize the force of the wind, because we move with it. If we can alight on the top, fine. If I see we cannot, I will set us down in the water. Perhaps we can work our way around over the talus when the surf subsides."

Marko still looked doubtfully at the surf, since little talus showed above the waves. He said:

"I hope the balloon decides to do one thing or the other. I should hate to pull the rip cord and then miss the edge by a foot."

"Prepare to pull," said Halran, valving air.

Marko grasped the cord. He stared fascinated as the cliff rose towards them and the land opened out. The course of the balloon was tangent to the curve of this edge. A yard to the right, and they would be safe on the mesa; a yard to the left, and they would tumble off into the smother a hundred yards below.

"Pull!" screamed Halran, throwing a leg over the side of the basket.

Marko pulled, then gathered up the slack and pulled again. He heard the ripping sound of the slide of the zip-fastener, and the basket dropped suddenly. It struck the ground with a mighty jar. Marko staggered, recovered, and started to climb over the side

after Halran, who had leaped to the ground at the instant of alighting.

Before Marko could do so, the underside of the stove smote him on the head as the collapsing bag lowered it on the basket. Then the basket overturned as the wind dragged the bag. Marko had an instantaneous picture of the bag (now limp and flapping), the stove, the ropes, and the basket all bumping along the ground in a tangle of which he was the center. He rolled free into the wet phosphor grass.

"Help me!" shrieked Halran, who had seized a fold of the fabric and was trying to drag it back from the edge of the cliff. So close to the edge had they come down that part of the bag hung over the precipice. A good gust might send the whole apparatus off into the sea.

Marko helped Halran to haul the heavy fabric back, fold by fold, until it was all safely away from the edge. He was assisting the philosopher to drive the anchor and a couple of stakes into the ground when voices made him turn.

He faced a group of women wearing knee-length skirts or kilts. Although he could not be sure in the fading light, most of them looked young. Marko strode towards the group, saying:

"I beg your pardon, ladies, but is this—"

The girls turned and ran shrieking; all but one, who stood her ground. She looked youngest of all, a smallish girl, who said:

"Who are you?" She spoke Anglonian, but in a dialect that Marko found hard to follow.

"My name is Marko, and that is Dr. Boert Halran, the philosopher. Is this Mnaenn?"

"Certainly. What are you doing here?"

"The storm blew us out of our course."

"What do you want?"

"Want? Why, you'll have to ask Doctor Halran, but I suppose we should like quarters for the night, or until the wind blows the right way, and then some help in blowing up our balloon again."

"What did you call that thing?"

"A balloon. Doctor Halran has just invented it."

"Oh. The others thought you demons. You may have trouble convincing the Stringiarch you are not."

"Who are you?" said Marko.

"My name is Sinthi."

"Sinthi what?"

"Just Sinthi. We do not have surnames. Where are you from?"

"We set out from Lann before dawn, yesterday morning."

"Great Einstein! You must have ridden the wings of the wind."

"That," said Halran, joining them, "is precisely what we did, young lady. Now if you could see about obtaining us a meal and a place to sleep, we will not be any more trouble than we can avoid."

"I hope I can," said Sinthi. "The Stringiarch will be furious with you for alighting without permission. I suppose you have been to Niok and Roum and Vien and Bahdaed and all the other great cities?"

"Yes," said Halran.

"I wish I could go there."

"Don't they let you leave?" said Marko.

"No. Once a witch, always a witch."

They walked slowly towards the settlement. Marko asked: "What sort of witchcraft do you do?"

"I am training to be a pyromancer. I wanted to compound love philtres, but they said I lacked talent."

"And what is this cult of Einstein?"

"Why, this is the center of the worship of Einstein, the god of science," said Sinthi.

Marko said: "Our Syncretic Church of Vizantia recognizes Newton as the god of wisdom: one of the surbordinate gods along with Napoleon and Columbus and Tchaikovski. But we have no Einstein in our pantheon."

"Well, here Einstein is not only the head god; he is the only real god, the others being mere demigods or saints. We say, 'There is no god but Einstein, and Devgran is his prophet.'"

"Who is Devgran?"

"David Grant, I think it was originally pronounced, the Ancient One who founded Mnaenn at the time of the Descent."

"And is that the temple?" Marko pointed to the domed structure.

"Certainly," said Sinthi.

"What's in it?"

"That houses the Great Fetish of Einstein."

"I've heard of that," said Marko. "Could we see it?"

"Oh, no! Outsiders aren't allowed to see it ever. We hold a special service for it once a year, at which time it is uncovered."

"What is this fetish?" asked Marko.

"Oh, I don't think I should tell you."

"A statue, is it not?" said Halran innocently. "A golden statue

of Einstein holding a mountain in one hand and hurling a thunderbolt with the other—"

"No!" cried Sinthi. "Einstein, being pure spirit, is incorporeal and cannot be depicted."

"Oh, I must have been misinformed," said Halran. "Then the story is true that it is in the form of a geometrical figure, with gems at the angles. . . ."

"Nothing of the sort! The fetish is a pile of boxes about so high." She indicated the height of a yard. "Each box—" She clapped a hand over her mouth. "You mainlanders are too clever for me!"

"Well, well," said Halran in a fatherly way, "now that we know so much, you might as well tell us the rest. It is not as though we intended to harm or desecrate the sacred object."

"Well, each box is made of a transparent substance, like glass but flexible, and inside each box is a stack of cards about the size of your hand. These cards have a spotty look, but there is no writing on them as far as anybody can see. Still, the Prophecy of Anjla says the reign of the Witches of Mnaenn shall end when a man-child of Mnaenn shall read the wisdom of the Ancient Ones from the cards of the Fetish. But that is of course impossible."

"Why?" said Marko.

"Anjla prophesied hundreds of years ago. At once, the Stringiarch adopted the policy of killing all male children at birth, instead of selling them, so that their rule could never be ended."

"So that," said Marko, "is why you witches get your male customers to father your children?"

"Yes. But I've never had one yet. The older witches get the first claim on them. By the time the clients finish with them, they are no longer interested in us younger ones."

Marko clucked disapprovingly. It would be a mighty man indeed who could work his way down through the whole hierarchy.

A trumpet blew in the twilight, and figures appeared running. A lantern with a reflector cast its spotlight on Marko and Halran.

"Surrender!" cried a high female voice in the accents of Mnaenn. "Drop that ax, foreigner, or we'll fill you with bolts!"

Marko saw that, of those who approached, several carried cocked crossbows. At that range, they could hardly miss, even in the near-dark. Neither man wore any armor. Even if they fled now, they could not escape from the island without help in reinflating their balloon.

"They have us," said Halran. "Oh, why did I ever set out on this rash venture. . . ."

Marko drew his ax from its sheath and tossed it on the ground.

"March!" cried the same high voice.

"Madam," said Marko, "We're only harmless travelers who—"

"Silence!"

In the town of Mnaenn, the houses were small but solidly built of the island's black basaltic rock. They were broad and squat in outline, as if the builders feared that hurricanes would blow them away.

More witches appeared in the doorways, looking with frank curiosity at the captives. Marko caught comments on his appearance and suppositious attributes that made him blush.

The houses became larger as they approached the temple in the center. The temple was a big structure, with three stories towering over the rest of the town. From the great central dome, wings rambled off in eight different directions.

The escort herded Marko and Halran into the door at the end of one of these wings and down a long corridor.

By the lamplight of the interior, Marko had a better chance to see his captors. They were all armed women, wearing polished brass cuirasses molded to accommodate the female form, crested brass burgonets on their heads, and kilts. Some carried crossbows and some light pikes. All had blades—one could call them large daggers or small swords—hung from their belts. They did not look very formidable; but Marko reminded himself that, even if he were twice as burly, a jab from a sharp spearhead would let out his life no matter who wielded the weapon.

The women did not wear the cosmetics affected by those of the Anglonian cities, but they were neater and more attractive than the slatternly hill women of Vizantia. The frequency of light hair and blue eyes bespoke Anglonian or Eropian ancestry.

Sinthe had come in with the rest. Marko saw that she had greenish eyes and brown hair with a strong reddish cast. She was a well-rounded, buxom girl, not exactly beautiful, but good-looking in a wind-blown, healthy way.

§ § §

Marko was escorted into a room where sat an elderly woman, lean and hard-looking. The female soldiers clanked to attention. The oldest, who had screeched at the travelers, laid Marko's ax on the desk and told her story. Marko could not get all of it because she spoke fast in her strong dialect, but he gathered that he and Halran were suspected of designs on the Great Fetish.

The lean old woman glared at the two men and spoke to Hal-

ran: "I am the Stringiarch Katlin. Tell your tale, foreigner."

Halran began: "It is this way, my lady. I am Dr. Boert Halran, philosopher, on leave from the faculty of the University of Lann. I have been engaged in some experiments of unparalleled significance. . . ."

Halran wandered off into the technicalities of aerostatics, getting more and more abstruse until Katlin interrupted him: "I suppose you are speaking Anglonian, though it makes no sense to me whatever. I shall merely comment that you philosophers can look for little mercy from us, if by your inventions you learn to duplicate all the thaumaturgies we effect by magic and thus deprive us of our livelihood. All right, Fats, tell your story, and try to keep to the point more closely than this old rattlepate."

Marko said: "My lady, I'm Marko Prokopiu, Doctor Halran's assistant. He invented this balloon, as he tried to tell you. We set out in it to fly to Vien, but the storm blew us out of our course so that we had to light on Afka. When we persuaded the Afkans to let us depart, a calm delayed our return to the mainland, so that we had to put down here. We sincerely apologize for trespassing and will leave as soon as we can reinflate our balloon, assuming the present wind holds."

"A likely story," snapped the Stringiarch. "I shall soon learn if it be true and what to do with you. Put them in a cell and summon the head sibyl."

The female soldiers led Marko and his companion away, down more halls, turning this way and that until Marko was completely confused. They went down a flight of stairs, through a door of bronzen bars, which clanged behind them, and into a cell with a similar door. The guards locked this door, too, and marched away. The captives were left in semi-darkness, relieved only by the faint glow of a lantern in a wall bracket down the corridor.

II.

Nothing happened for so long that Marko thought the next day must be approaching. The mercurial Halran sat with his head in his hands, moaning: "Oh, what a fool I have been, to take such chances at this season! Now we are surely doomed—"

"Hush," growled Marko. "Someone's coming."

There were light, quick steps in the corridor. Somebody stood at the bars, and Marko saw that it was the young girl who had first



greeted them on Mnaenn.

"Sinthi!" said Marko.

"Don't shout!" she said. "You must escape because they have decided to kill you and I will if only . . . and it must be soon because . . . so I'll give you. . . ."

"Get your breath, child," said Boert Halran, his despondency gone.

Sinthi gulped air and resumed: "The hierarchy has decided to slay you."

"Why?" said Marko. "What have we done? And don't they try people here as in civilized countries? Even the Afkans decided we were harmless."

"Oh, you have been tried."

"I wasn't aware of it."

"Well, you see, the trials here differ from those of the mainland. They're by divination."

"Oh?"

"Yes. The method of divination is selected at random from the *Handbook of Vaticination*, by thrusting a dagger between the leaves. In your case, the method chosen was by marwan trance. The sibyl went into her trance and saw you two with your necks across the altar rail, and the Stringiarch chopping off your heads with your own ax, to the glory of Einstein."

"Ugh," said Marko.

"I wasn't supposed to know about this, but I listened through the crack of the door. They had an argument. Mera objected that, while they might manage with Doctor Halran, Master Prokopiu was too big to lay his head peaceably on the rail. He might break loose and start chopping them instead. Valri, the suffragan, objected that the Stringiarch wasn't strong enough at her age, especially considering how thick Master Prokopiu's neck is, and she might miss and gash the altar rail. Klaer was against the whole project as barbarous, as there hasn't been a human sacrifice on Mnaenn in nearly a century."

Marko asked: "Why didn't they dismiss the whole idea?"

"No, Katlin insisted. She's very pious, you know. But she admitted she couldn't take off your head with one neat slice. So in the morning they will send the troopers down here to shoot you with crossbows. Then they'll drag your bodies out and lay them on the talisman table in front of the altar and ceremonially cut off your heads, probably with a saw."

"Oh, dear!" said Halran. "That is terrible. Marko, do something! Think of something! Get us out of here!"

Marko said: "Sinthi, did you mention getting us out?"

"I can."

"How?"

Sinthi held up a bunch of keys.

Marko said: "What do we do when we get out?"

"I don't know. I thought you could lower the rope ladder, climb down, and take one of our fishing smacks."

"How big are they?"

"Oh, one or two can row them. But I forgot a squad of guards is stationed at the ladder, as that's where an invader would come up."

Halran said: "I doubt if any such small boat could live through the sea out there anyway. But if I could get help in filling my balloon. . . ."

Sinthi said: "What would you need for that?"

"Oh, perhaps a dozen hands and a supply of peat. I could direct

them to rig the bag for inflation, and by morning we should be ready to go."

Marko grunted: "I can see the old Stringiarch saying yes, gentlemen, gladly. Unless. . . ." He turned to Sinthi. "Where is she now?"

"Asleep, I suppose. Everybody has retired except the witch who has the temple guard. That's how I stole these keys so easily."

"You don't keep a heavy guard around here?"

"Why should we? There is hardly any crime among us; these cells haven't been used for months. We do keep a watch on the cliffs against invaders from outside."

"Where does the Stringiarch sleep?" asked Marko.

"At the end of the second floor of the fourth wing. You go up the stairs, and turn sharply to your left, and down that hall, and up another stairs, and back towards the center. . . ."

Marko made Sinthi repeat her complicated directions slowly several times, until he thought that he had them memorized. She had the exasperating female habit of saying "up" or "down" a passage when referring to horizontal movement, and it cost Marko some mental gymnastics to translate her directions into compass points. She said:

"You are not planning to hurt Katlin, I hope? Even though I don't like her, I would not be a party to her murder."

"Not at all," said Marko. "If I can get something with a sharp point, I'll persuade her to order her people to help us off."

He held out his hand for the keys, but Sinthi moved back from the bars, saying: "Oh, no, there's a condition."

"So?"

"You must take me with you."

"Oh?" Marko exchanged looks with Halran, who said:

"I fear, my dear, our balloon will not carry that much weight."

"It would raise me and one of you, wouldn't it?"

"Neither of us would leave the other," said Marko.

"No ride, no keys," said Sinthi.

"Oh, come," said Marko. "Why are you so anxious to leave?"

"Because I hate this place. I'm bored to death. I don't want to be a pyromancer and spend my life staring into fires to see visions. I think that is all a lot of nonsense anyway. I want to be a housewife, like the mainland girls, and have a man and a home to myself. . . ." A tear glimmered.

Marko thought, then said: "I should be glad to take you, but Doctor Halran knows what he's talking about. There is no point

in our all taking off, only to come down in the sea five minutes later. I'll tell you. . . ."

"Tell me what?" she said as Marko paused.

"I swear by all the gods that if you help us to get out of here, I will do my best to come back and fetch you too."

"Well. . . ."

"Look," said Marko. "I'm a Vizantian. You have heard, haven't you, how punctilious Vizantians are about keeping their word?"

"Y-yes, though I suspect you aren't always so careful as you claim." She hesitated again. "All right, I'll do it. But if you play me false, I'll cast every kind of spell in the arsenal of Mnaenn, from *envoûtement* down."

Marko smiled. "I thought you didn't believe in them?"

"I don't exactly disbelieve in them either. One of them just might work. Here, take your keys, but give me time to get back to my dormitory before you break out. I don't want to be connected with your escape."

"If I count five hundred, will that be enough?"

"I think so, if you don't count too fast. Good-bye and good luck."

§ § §

Marko and Halran waited until Marko had counted. Then Marko tried keys until he found one that unlocked the door of their cell. He started out, then turned to the philosopher.

"We can't go clumping through the halls this way," he whispered, indicating his own heavy boots and Halran's low but substantial shoes.

They removed their footgear and issued forth carrying them. Following Sinthi's directions, Marko led his companion up flights of stone steps and round bends and turns in never-ending corridors. There was no sound, and the only light was that of occasional lamps turned down for the night.

They halted at a pair of large closed doors. Halran murmured: "I am sure this is where she said to turn right, which would take us through these doors."

"No, no," said Marko. "She meant to continue north until the corridor itself turned."

They argued in whispers. Finally Halran said: "Well, let us at least look to discern what is beyond this door."

Marko cautiously tried the handle. The right-hand door opened with a faint squeak, and behind him Halran drew in his breath.

They had blundered into the cella of the temple. The only light was that of a single lamp, on what Marko recognized as the

talisman table. Its light did not reach far. From the darkness above, faint reflections winked back from the jewels and precious metals of the decorations.

Marko shut the door behind them and tiptoed to the center of the structure. Behind them ranked the pews; before them stood the table with its lamp. Beyond the talisman table was a big, massive railing. Marko glanced at Halran and made a chopping motion with the edge of his palm. He laid down his boots and climbed over the rail.

Behind the rail rose the altar, a pyramidal structure with a half-dozen steps going up on each side. Another table or similar support rose from its top. Something else stood atop this. The thing on the support and most of the support itself were hidden by a cloth-of-gold draped over them.

Marko pulled off the cloth and saw the Great Fetish. Just as Sinthi had said, it consisted of a stack of small boxes of transparent substance, each a little bigger than a pack of playing cards. The boxes themselves were arranged in pyramidal fashion. Marko guessed that there were forty or fifty boxes.

Marko said: "Let's take these with us."

"All of them?"

"Why not?"

"For one thing, we cannot afford the weight. For another, if you take them all, the witches will notice the loss and will probably tear us to pieces, even if we hold their high-priestess as hostage. If you put a couple in your pockets. . . ."

Without further argument, Marko attacked the stack, which was bound by a golden string. He worked the two topmost boxes out of the string and stowed them in his sheepskin. The removal of the boxes left the string limp and loose. To make his theft less patent, Marko gathered up a loop of it and tied it. Then he replaced the cloth-of-gold.

They stole out of the cella and closed the door behind them. Marko whispered:

"I know where I am now. Down that corridor is the office where the Stringiarch interviewed us. Come on."

"Why?"

"You'll see."

Marko hastened down the corridor and into the office. There was no light inside, but enough came through the door so that his eyes, now accustomed to the dimness, made out the furnishings. He hunted for his ax, but it was not on the desk and not sus-

pended from the walls. Finally he began opening desk drawers, which stuck and squeaked until Halran emitted a terrified hiss:

"Curse you, Marko, be quiet! You will have—"

At that instant Marko tried the last drawer, which stuck, then gave with a piercing squeal. His hand, groping in the dark, found the hilt of his ax just as the door opened wider and a female voice cried:

"Ho! What—"

A glimpse showed Marko the silhouette of a witch in half-armor, with a spear over her shoulder. He plunged around the corner of the desk and at the woman, knocking Halran flat in his rush. Before she could say a third word, he struck.

The Vizantian culture pattern included rough chivalry on the part of the men towards their women, so long as the women adhered to the sexual code. Therefore Marko smote the watch-woman with the flat of his ax, not the blade. The blow crashed down on her brazen helmet and knocked her to the floor, with the clatter of a hundred overturned fire irons.

"Oh, gods!" breathed Halran in the silence that followed. "We are done for!"

Marko dragged the woman's body all the way into the room and softly closed the door. Now they were in total darkness. Marko pressed his ear to the door. He thought he heard a voice call a question; then nothing but silence.

"She is still alive," came Halran's whisper.

"I only tapped her with the flat to stun her. Take her sword."

"But—I know nothing of weaponry. . . ."

"Oh, Earth! Carry my boots then. Here. Had I known I should meet her. . . ." Marko took the little sword himself. "Come along."

After another long stalk and climbing another flight of stairs, they found themselves outside the room of the Stringiarch. Marko tried the door of dwarf-stupa wood. It was locked.

He fumbled at it without effect, then said: "It doesn't look very strong. I think I could burst it with a good lunge. But if I miss the first time . . ."

"I understand," said Halran. "Would it not be better to chop it open?"

"No, that would take several licks. The noise would bring the witches. Stand back."

Marko sprang across the corridor and hurled his weight against the door. It was held in place by a light bolt on the inside, the bolt plate in its turn being secured by four nails. As Marko's

weight struck the door, the bolt plate flew across the room. The door slapped open. Marko staggered into the room before he could stop himself.

The room was a sitting parlor, not a bedroom, faintly lit by a turned-down lamp on a table. Marko heard a sharp voice:

"Who is there? What is it?"

Guided by the voice, he plunged into the bedroom, found the bed, and touched the point of his sword-knife to the chest of the Stringiarch just as she sat up.

"Be quiet and do as you're told, and you shall live," he said.

Voices sounded in the corridor. Halran tumbled into the bedroom. "The witches!"

"Tell them to stay out," grated Marko, pressing his point a little harder.

"S-stay out, girls!" said Katlin. "Now, what do you two brigands want?"

"To leave," said Marko. "Doctor, explain to our hostess."

Halran gave directions for starting a peat fire and inflating the balloon. At the mention of the quantity of peat, Katlin balked. "Ridiculous!" she cried. "We have to import every bit of peat, as there is none on the island. You—"

She subsided as Marko pressed a little harder, and said: "How long will this take?" Marko could not help admiring her coolness.

"What time is it now?" said Halran.

"Only about half past fifteen. I had just gone to sleep."

"It will take at least till dawn," said Halran.

"And," added Marko, "every minute I shall have the point of this against you, and the first false move. . . ."

"Spare me your melodramatics, sir brigand," said Katlin, throwing off her covers. "I trust you would not force me to stand naked all night on the cliff edge?"

"No." said Marko, covering his embarrassment by handing his ax to Halran. "Stand in the doorway, Doctor, in case she gets past me. Dress, madam."

Stringiarch Katlin covered her lean shape with clothes, while Marko stood guard. When she had finished, he seized her wrist, bent her left arm behind her, and marched her out with the point of the sword pricking the skin of her back.

§ § §

Muphrid was well up in a clear turquoise sky when the balloon was inflated. Boert Halran tested the wind and said:

"Jump in, Marko."

Halran pulled loose the canvas tube that led from the big peat stove, which the witches had woman-handled out to the site of the balloon. He swung aboard. Still gripping the Stringiarch's wrist, Marko tossed his short sword into the basket and climbed in after. "Cast off those ropes!" commanded Halran.

He emptied a couple of ballast bags. The witches untied the ropes belayed to the stakes that held the balloon down. Marko let go of Katlin's arm as the balloon rushed up and away.

The instant Marko released her, the Stringiarch sprang away from the basket. "Bows!" she screamed. "Arbalests!"

From the nearest clump of dwarf stupas, a group of witches ran with crossbows cocked. When they came to the place from which the balloon had ascended, they raised their weapons.

The balloon was swiftly rising and drifting westward, but the travelers were still within crossbow range. Boert Halran leaned over the side of the basket, placed the thumbs of his outspread hands against his ears, wiggled his fingers, stuck out his tongue, and yelled: "Yah, yah, yah!"

The bowstrings snapped. Both men ducked below the edge of the balloon. Two bolts struck the basket. Another glanced from the small peat stove above with a clang, while the rest screamed past. By the time the arbalesters had cocked their weapons again, the balloon was out of effective range. Two of the warrior women tried long shots anyway. The bolts streaked upwards, slowed, hung for an instant, and fell back towards the ground.

Mnaenn sank and dwindled until the people were mere ants. Marko said: "Whatever possessed you to hoot at them in that undignified way, Doctor?"

Halran replied: "Had I not, they might have shot at the bag, which they could easily have hit."

"Would the escape of air through the holes have forced us down?"

"I do not know. I do not think that one or two small punctures would force us down much sooner than we should have to descend anyway. But such a hole might start a rip in the fabric, which would drop us like a stone."

"Oh," said Marko.

"Again I owe you thanks, Marko. I am a peaceful fellow, who has not struck a blow in anger since boyhood. Without your iron nerves and steel muscles, I should now be as dead as the Ancient Ones; and without your quick wit, my head would be an Afkan trophy."

Marko blushed. "Please, Doctor. You know I'm not really proud of the few little things I did because I had to. What I really want is an earned university degree."

"Now, is that not the contrary human race?" said Halran. "When I was young, I yearned to be a mighty athlete and adventurer. Being a spindly, awkward little terson, I had no chance. You, with enough might for two men, would rather be a pale, hollow-chested scholar. If the gods made man, which I doubt, they should have made him so he sometimes enjoyed what he has instead of forever yearning for what he has not."

"If they had, we should probably be mere animals," said Marko. "Whither are we bound now?"

Halran unfolded his chart. "At this rate, we should reach the Eropian coast in about six hours. It will not, however, be the part of Eropia to which we wish to go. We should come down somewhere around Ambur or Pari. And now, if you will excuse me, I think I am going to faint."

III.

Marko slept through most of the next leg of the journey. They crossed the Eropian coast around noon.

The country over which they drifted was thickly settled. When they passed low over a town or village, Marko would sometimes see groups of Eropians running about and pointing at the balloon.

Marko felt sad because he had not been able to bring Sinthi along. While of course he hardly knew her, she impressed him as the sort of girl a man like himself needed. He was particularly attracted by her self-confessed virginity. To find an Anglonian girl over sixteen with that status was apparently impossible.

As the afternoon wore on, the ballast and peat ran low. Halran lowered the drag rope so that its lower end trailed on the ground. This acted as an automatic height governor. When the balloon sank, more of the rope lay on the ground; the balloon, relieved of its weight, rose again. By saving them the necessity of constantly valving air and dropping ballast to keep their altitude adjusted, this simple device stretched their flight for many miles.

The ground, however, came nearer and nearer despite the drag rope. Halran said: "Marko, keep an eye open for a good, firm-looking field near a road. And I do not wish to squash anybody's crops if I can avoid it."



As the balloon sank, Marko sighted a suitable field. The field was being plowed by an Eropian peasant with a team of oxen.

Halran valved air until the basket skimmed along a few feet above the ground. The peasant abandoned his team to run madly away. The oxen bellowed and ran, too, although when they had crossed a couple of fields, they forgot their fright and fell to eating.

"Pull!" cried Halran.

Marko pulled the rip cord. Down they came. They climbed out of the tangle and set to work to unfasten the ropes and fold up the bag for transportation.

They were hard at this task when voices made Marko turn. A group of Eropians was approaching over the soft earth: stocky men with little round dark cloth caps on their heads and pitch-forks and other implements in their hands.

"Well?" said Marko, facing them.

The Eropians jabbered and gestured. One seemed to be haranguing the others to attack the aeronauts.

Marko had a fair reading knowledge of Eropian but could not understand it when spoken fast in a local dialect. The peasants' hostile intentions, however, were so obvious that he took hold of his ax.

"Wait, Marko," said Halran, and spoke to the Eropians in their own tongue.

The peasants looked at Halran and began arguing among themselves louder than ever.

"They think we are demons," said Halran. "Ugh. They look dangerous. There is nothing so dangerous as an ignorant and frightened man."

He spoke again, shouting to make himself heard. The peasants paid him no heed. Instead, they began working themselves up to a rage. They shook their fists, screamed, spat, and jumped up and down, waving their implements and shouting threats. Marko said:

"Doctor, take that little sword. If they start for us, our best tactic will be to charge them."

"Oh, no, Marko! Do not antagonize them!" cried Halran. "If I can only make them listen to reason. . . ."

Marko took out his ax, slipped off his sheepskin jacket, and wound the garment around his left arm for a shield. If he could kill a few, the rest would run.

Before the battle could be joined, however, hooves beat upon the nearby road. A rider pulled up and walked his mount over to the crowd, shouting an order. The rider wore one of the most gorgeous costumes that Marko had ever seen. It included a tall cylindrical hat with a shiny black peak and a brass ornament on the front, a red coat with brass buttons, and high, shiny black boots. In his hand, the man bore a long saber.

At the arrival of this personage, all the peasants faced about, dropped their hoes and forks, and knelt with their heads bowed. Then they rose up and began pointing at the travelers and jabbering.

The rider rode closer and shouted a string of questions, which Marko took to mean: "Who are you? Where do you come from? What are your names? Where were you born? What is your citizenship? What is your occupation? What are you doing here?"

Halran answered. The mounted man snapped: "Is it true that, as these clodhoppers say, you came down from the sky?"

"Yes, sir," began Halran, but the mounted man interrupted:

"You are under arrest for illegal immigration, practicing magic without a license, and disorderly conduct. Show your papers."

Marko had been astonished, when they first set out, at the number and variety of papers his friend had felt obliged to obtain before journeying to Eropia. Halran had assured him that, to visit that country, one could not have too many. Now Halran handed this mass of documents up. The mounted man sheathed his sword, raised a lorgnette to his eyes, and went through the papers. Apparently he read every one through. The peasants stood in a knot in the background, muttering.

At last the mounted man handed back the papers. He folded up his lorgnette, drew his sword, twirled it in some sort of complicated salute, and sheathed it again. This time he spoke in Anglo-nian, albeit with a strong accent:

"A thousand pardons, your excellencies! A million pardons for having inconvenienced you! But, you understand, I am but a humble policeman and as such must do my duty. Patrolman Jakom Szneider, at your service. Sir Doctor, if you will have the inexpressible goodness to follow me to the police station in Utrec, I will arrange for the issuance of internal-travel papers for you."

"What do you mean by that?" said Halran.

"Oh, these papers allow you to enter Eropia, but you need special permits to travel from one province to another. Have no fear. Utrec is only a mile down the road, and I will walk these papers through myself."

"How about arranging transportation to Vien for my balloon?" said Halran.

"That can be done in Utrec. Let me think—Einri Lafonten has a big wagon and a four-horse team. Of course, you as a foreigner must have a special license to employ a native Eropian. You must also swear to do no work in Eropia that would compete with one of our artisans' guilds, and there are also some small taxes. But fear not. I, Jakom Szneider, will expedite matters with incredible dispatch!"

"Where is Utrec, officer?" asked Halran.

"Why, there!" said Szneider, pointing. "You can see the roofs."

"I mean, where is it on the map? What is it near?"

"Oh? We are about fifty miles northwest of Pari."

Halran groaned. "That means several hundred miles from Vien, and the accursed convention opens tomorrow!"

"Why can you not fly your machine to Vien?" asked Szneider.

Halran explained that balloons went with the wind only, and they came to Utrec.

§ § §

Three days later, the wagon of Einri Lafonten, bearing Boert Halran, Marko Prokopiu, and the balloon, rattled into Vien, an old gray city built on the inside of a bend in the Dunău River.

During this stage of their journey, Marko had come to appreciate Halran's skill as a traveler in civilized countries. In this land, forms and regulations attended every step, the all-powerful government had its fingers in everything, and everybody expected a tip. Patrolman Szneider, for instance, had helped them not out of the goodness of his heart, but because he assumed that Halran would give him a generous present at parting. Back in Vizantia, to proffer money not due and asked for was an insult to the honor of the person to whom it was offered. Travelers had sometimes been struck dead for offering a proud Vizantian a gratuity. Other lands, other customs, Marko kept reminding himself.

The guards at the gates of Vien, as usual, pored over Halran's papers for half an hour before letting the wagon in. Einri Lafonten's driver drove them over the winding cobblestoned streets, past the ornately carven mansions of the magnates whose power Alzänder Mirabo had broken. They stopped at the old city hall, which had been turned over to the philosophers for their convention.

The convention hall was guarded by troopers of the Prem's imperial guard, clad in chain mail from head to foot, with cylindrical barbutes on their heads and halberds in their hands. Inside the grounds, Marko could see small groups of men walking about before the building. The Eropians could be distinguished by their shaven heads. Halran explained:

"You see, Marko, the mighty Prem is bald as an egg himself. So, rather than bother with wigs, he shaved off what little hair he has. That naturally made the egg-head the official Eropian fashion."

After more paper-shuffling, the guards admitted the wagon to the convention hall's grounds. Several men approached. Halran called greetings to some of them. A big stout fellow, with a red beard all over his chest, came forward through the gathering crowd, crying:

"Boert! What in Earth's name are you doing here?"

"Bringing my balloon to the convention, as I said I should," replied Halran.

"You fool, don't you know that once you're in, they won't let you out again?"

§ § §

"Come to the parlor where we can talk," said the red-bearded man. Halran introduced him to Marko as Ulf Toskano, a mathematician and the chairman of the convention.

"But what is this all about?" said Halran plaintively. "After all the perils we have surmounted to get here. . . ."

Toskano said: "You should have got here at the opening, if you were bound to get caught in the trap anyway. You missed the wonderful demonstrations by the Chimei brothers yesterday."

"Who are the Chimei brothers, sir?" asked Marko.

"Opticists from Mingkwo. They have done the most amazing thing. Ryoske Chimei has invented a thing he calls a telescope, which makes far things look near, while Dama Chimei has invented one he calls a microscope, which makes small things look large. They had the place in an uproar yesterday.

"We stood in a line a hundred yards long to look through the telescope, which shows a score of stars where we can see but one with our bare eyes. It shows the mountains and valleys of the moons. It is too bad the sky is now overcast, but perhaps Dama Chimei will let you see his microscope. The sight of a drop of stagnant water under that thing will give you nightmares. This is the biggest development since the steam engine. But then this morning, the Prem threw his guards around the hall and announced this idiotic debate."

Toskano pushed open a massive stupa-wood door and led them into the vestibule. Through the doors of the main auditorium, Marko glimpsed the backs of an audience listening to arguments among a small group of men seated on a stage.

Marko said: "What's going on in there, sir?"

Toskano explained: "A panel discussion on that same old subject: can steam power be applied to land transportation? I proved long ago it's impossible. You can build a little brass model that will pull a couple of wagons across a table top, but the minute you try to go into larger sizes, the weight factors defeat you."

Toskano led them up a flight of stairs and into a large room. There were armchairs and tables, on which books and periodicals were piled. Philosophers sat about smoking, reading, talking in low voices, playing brizh or chess, or just sitting. Halran wailed:

"But what is this fatal debate?"

"Calm down, Boert. If you're going to die, it might as well be

like a man. You know there has been a tremendous to-do in Eropia about the Descensionist theory. The archeologists and historians claim they now have almost conclusive evidence for it, while the Eclectic Church denounces it and demands that the old heresy laws be applied against us.

"The common people are all excited too, some for and some against, although not one in a hundred really knows what it's about. It's got so we dare not wear our academic robes abroad for fear of having stones thrown at us. Maybe the Philosophers' Guild should have bent with the wind, but instead of that we defied the Evolutionists and petitioned Mirabo to disestablish the Church."

"Well?" said Halran.

"This morning the Prem announced that, tomorrow afternoon, there should be a grand debate between the Descensionists and the Evolutionists, to settle the question once and for all. If he decides the Descensionists are right, he will disestablish the church and execute all the priests, whereas if the Evolutionists win he will cut off all *our* heads."

"Good gods!" said Halran and Marko together. Halran added: "Is the man insane?"

"No; that's just the emphatic way our little Prem does things. Whichever side is right—or whichever he thinks is right—can have anything it asks, while the side that is wrong has been misleading the masses and must die as a crowd of dangerous liars and subversive demagogues."

Halran wailed: "Oh, curses! curses! Why was I born? I shall appeal to the Prez of Anglonia! Can we smuggle out a message?"

"Perhaps, but I doubt if you could get any action from your government before all was over. Besides, from what I hear, your Prez thinks a massacre of philosophers would be good riddance. He's the great peasant leader, and to him nothing that doesn't smell of manure is worth *that*." Toskano snapped his fingers.

Halran pulled himself together. "Then obviously we must win this debate. My friend Master Prokopiu might be of some assistance. He has just been chased out of Vizantia as an incorrigible Descensionist."

"So?" said Toskano. "How is this, Master Prokopiu?"

"I should be glad to help," said Marko. "I have a fair command of the Descensionist arguments as a result of my trial."

Toskano said: "I don't think you would do as a speaker, because your Eropian is not good enough. But I shall appoint you to the committee that is to prepare the debating panel tonight, in case

you can contribute a useful suggestion. This will be an all-night task, you know."

Marko said: "Sir, I had rather lose a night's sleep than my head."

"Good. Now tell me about your journey hither. What delayed you?"

Halran summarized the story of their landings on Afka and Mnaenn and their escape from those places.

Ulf Toskano said: "Have you those boxes of cards you took from the Great Fetish?"

Marko brought the boxes out of his pockets and handed them to Toskano, who opened the flap on the end of one box and drew out a card. It was made of a smooth, yellow-white substance. It had the appearance of an ordinary playing card but the feel of being much stronger, as if it were made of metal. On both sides, it was covered with little gray spots arranged in a rectangular pattern, with yellow-white lines between the rows. Toskano handed it back.

"I can make no sense of this," he said. "Let's walk around and look at the exhibits before supper. We shall have enough to do afterwards. It's too bad. Moogan, one of our most effective speakers, was going to deliver a paper on heredity tonight but has begged off because he is too upset about his impending doom."

Toskano led them out of the parlor and down a hall. A series of small chambers had been fitted up as exhibition rooms. One, for instance, contained diagrams showing the theory of one school of naturalists about the proper classification of Kforrian life-forms, with preserved samples of small plants and animals to illustrate.

The next room contained a table on which stood Dama Chimei's microscope, with an assortment of small objects—leaves, fragments of animal tissue, paper, cloth, and so forth—to be seen through it. The Chimei brothers stood at the table answering questions about their device and showing visitors how to operate it. Ryoske Chimei explained, for it seemed that Dama Chimei spoke neither Eropian nor Anglonian. Like other Mingkworen, the Chimei brothers were short men with yellowish skins, straight black hair, and flat faces with wide cheek bones.

"Ha, Doctor Chimei!" said Toskano. "Here are some new visitors to see your marvels. This is Doctor Halran, who has solved the secret of flight, and his assistant Master Prokopiu."

Ryoske Chimei bowed stiffly. "We are honored that persons of such importance trouble themselves to view our poor trifles," he

said in a singsong voice. "If you will wait until this gentleman has finished. . . ."

Ryoske Chimei spoke to his brother in Mingkwohwa. Toskano murmured to his companions:

"Don't let that pretence of humility fool you. That's just Mingkwoan manners. They are the most self-conceited fellows I ever met; everything outside of Mingkwo, to them, is barbarous squalor."



"If you please, sirs," said Ryoske Chimei, and Halran bent over the microscope, ohing and ahing as he witnessed the wonders of the microcosmos. While Halran was looking, Ulf Toskano said:

"Master Prokopiou, get out of those boxes of cards you brought from Mnaenn. Thank you." He took out a card and handed it to Ryoske Chimei, saying: "Try this under your magnifier."

Ryoske handed the card to Dama Chimei, who slid it under the objective of the microscope.

"Hey!" cried Boert Halran. "Those little gray discolorations are writing!"

"What?" said Toskano. "Don't be ridiculous! Who could write so small that not even the letters could be seen?"

"This is printing."

"But how could it be? For printing, somebody has to cut a type mold; somebody else has to cast a type slug; somebody else has to set the slug in the press—"

"Look yourself." Halran made room for Toskano.

"By Napoleon, it is at that," said the chairman, "but in no language I know. I thought I had a smattering of all the tongues of Kforri."

Halran said: "Many of the letters are like those of our alphabet, but the combinations are strange."

"We need a linguist." Toskano glared about and crossed glances with one of the other philosophers waiting his turn at the microscope. "Bismaak! Do you know Duerer?"

"Yes," said Bismaak.

"Well, try to find him as quickly as you can."

"May I look now?" said Marko.

"As you brought the cards here, I suppose you have a right to," said Toskano.

Under the lens, Marko saw a whole page of type set in double columns. This page, he found by moving the card slightly, was one of the little gray spots, no larger than the head of a large pin. Under the glass, it was enlarged until it was just legible.

Bismaak returned with a whiskered man introduced as Duerer, who took one look into the microscope and cried: "This is Old Anglonian! I can read a little of it, but we need Domingo Bivar. He has devoted his life to the study of the few writings and inscriptions we have in that language. I'll fetch him."

Duerer departed at a run. After some wait, he returned in his turn with a small man, dark like an Arabistani. The newcomer, introduced as Domingo Bivar, was identified as an Iverianan by

the length of his hair, which hung almost to his shoulders. Doctor Bivar looked into the microscope and began to hop up and down as if the floor had become hot.

"This is a thing most extraordinary!" he shrilled. "Let me see another of the cards, for favor."

After further scrutiny he said: "Doctor Toskano, I must have the microscope, much note paper, much coffee, and the undisturbed use of the room till tomorrow. May I?"

After much palaver, it was agreed that Bivar should have unrestricted use of the microscope until the following day. The Chimei brothers made it understood that they would stay in the room to supervise.

§ § §

At supper, Marko saw the entire membership of the convention. Aside from the fact that some wore the garb of distant lands, like Arabistan and Mingkwo, there was nothing special about the philosophers. They looked just like people, to Marko's faint disappointment. He consoled himself, however, with the thought that if this were the case, nobody would object to recognizing him as a philosopher on the ground of appearance.

The committee for preparing the debate met after supper. Marko sat in with the rest. He soon found that his own knowledge of the Descensionist controversy was too elementary to be of much help here. When he made a suggestion, they turned on him saying:

"Yes, my dear Master Prokopiu, but if you had been here this afternoon you would know that we went over that idea first of all."

So Marko was reduced to sitting in abashed silence while the experts tossed ideas around. They were hard at it when a knock interrupted them. In came Ulf Toskano with a bearded man in workman's garb. The philosophers stared at the newcomers. One of the former rose and said:

"Greetings, Patriarch Yungbor. What brings your excellency into the lair of the enemy?"

There was a scraping of chairs as the others, too, recognized the head of the Holy Eclectic Church. Although some of the philosophers, to judge by their comments, were violently anti-clerical, all had been conditioned to this courtesy.

The Reverend Pier Yungbor sat down heavily at the end of the table. Ardur Mensenrat, the chairman of the committee, said: "How on Kforri did you get here? I thought all you people were

under lock and key, too."

The patriarch said: "Where the flock is faithful, the shepherd can look for unexpected succor. I take it you gentlemen are planning your side of tomorrow's debate?"

"Right," said Mensenrat.

"I am here to make an unprecedented request. Before I make it, let me say that I have what seem to be excellent reasons. You are philosophers; you pride yourselves on keeping your minds open. Try to keep them open in this case until you have heard me out. It will be difficult."

He stared around the table. Mensenrat said: "Proceed, esteemed sir."

"I ask that you 'throw the game'; that you deliberately lose to us."

The silence became loud. Yungbor looked mildly around the long ellipse and continued:

"You naturally ask why. Well, there are two reasons. The first is practical. Alzander Mirabo, as we all know, has long been hatching war against Iveriana. Specifically, he plans to march over the Equatorial Mountains and take them through their back country. We know the present government of Iveriana, weak and distracted by revolts, could never halt this invasion.

"The Kacike is a foolish old man, who has been preserved from assassination by ambitious subordinates only by their inability to agree upon a successor. His province of Sturia has been in open revolt for years. He sends armies against the Sturians, and his soldiers sell their arms to their enemies and desert. You see how much chance the Iverianans would have against the strongest, best-disciplined army in the world."

A philosopher spoke: "Under those conditions, wouldn't Eropian rule be all to the good?"

"No. For one thing, the Iverianans, however they betray and murder one another, hate foreigners even more and will fight to the last against them. I have been to Iveriana and know. They would practice hit-run, guerilla war. The Prem would burn cities and slaughter hostages in retaliation, and so on until most Iverianans were dead, together with many of our own people.

"The Eclectic Church has been exerting all its influence against this crime. So far, by playing on the Prem's beliefs, by dangling the hope of Earth and the fear of Space before him, we have held him off; but if he decides we are mistaken, what will hold him back then?"

"Another thing. By coöperating with the Syncretic Church in Vizantia and the Latitudinal Church in Anglonia and Barmadis-lam in Arabistan and so forth, we have prevented any serious outbreak of war for four decades. Would you wish to break this peace?"

Another philosopher spoke up: "Patriarch, we have our ideals too, though you may not believe it."

"I have said no such thing," said Yungbor.

"Specifically, we attach a value to the discovery of truth. We think it's good in itself. In this case we think we have found a particular truth that goes under the name of Descensionism. Would you have us suppress it?"

Yungbor replied: "No doubt you are taking for granted the validity of Czipollon's axiom, 'The true is the right and the right is the true.' Now think, gentlemen. Is there any reason for accepting such an idea as more true in the first instance than any other? Take the argument over Descensionism versus Evolution, for example. Let us suppose—I concede nothing, but merely suppose for the sake of argument—that Descensionism is true. Yet by pressing your belief, by urging it upon the people and their rulers, you may break the peace and touch off a round of wars worse than any seen hitherto on this distracted planet. Be assured, the Anglonians and Vizantians and Mingkworen will not sit idly by while Mirabo aggrandizes himself at the Iverianans' expense. They fear him enough now. And with this flying machine the Anglonians have invented, war will be more terrible than ever.

"In fact, with all these scientific advances of which you so proudly boast, you may one day be able to wipe mankind off Kforri, as the forebears of the present gods are once said in the myths to have done to one another on Earth. Then all we shall need is one lunatic in command of a nation. . . . Well, what is the good in such a case?"

Mensenrät said: "There is one other item, which you have not considered. Our necks."

Yungbor wagged his beard. "That goes without saying. There are ours too. I did not bring this matter up, because it is obvious what our respective preferences would be on the level of such sordid motives. I did hope that I could appeal to worthier sentiments.

"And consider this possibility, the second reason whereof I spoke. I know that many of you gentlemen do not accept our creed. You say that this is or is not objectively true, and point to cases where our finite minds have been shown to be mistaken in

the past. But consider! This creed, objectively true or not, is logically valid. It has been assembled by our great theologians over half a thousand years. And by means of it we keep the people in order. We restrain their natural violence and swinish lusts. We make it possible for them to live together as civilized men.

"You think you have created civilization with your inventions and discoveries. In fact, people got along well enough up to fifty or seventy-five years ago, when your inventions and discoveries began to come so fast that they have revolutionized everybody's thinking. The Church is the only stable institution they have left to cling to. But what good would inventions and discoveries be without a moral force to make people moderate their actions towards each other? How long would they be civilized if, every chance a man had, he knocked his neighbor over the head, dragged him into his kitchen, and cooked and ate him?

"You scoff. You say, *I* should never consider such an act. I lead a moral upright life without supernatural sanctions. But are you gentlemen average citizens? You know the answer to that one. Still less are you members of that large fringe who really prefer evil to good, who revel in wickedness. If you do not believe such people exist, come with me to night court—that is, if we all survive our present peril. So if you convince the Prem of your 'truth' and overthrow our creed, who shall guide the people? Do you think you can do so by equations and formulas, which they cannot even understand?

"Think about what I have said, gentlemen, and thank you for your courtesy in listening to me. Good-night."

When the patriarch had gone, there was a moment of silence. A committeeman said: "I may not agree with him, but he's a plausible old devil."

"He is perfectly honest in his way," said another.

"Oh, nonsense!" said another. "All supernaturalism is simply a scheme to enable a class of magicians called priests to live without working."

"Oh, that's not fair at all. . . ."

They argued inconclusively, shying away from the actual decision. It transpired that all of them wanted to save their heads and therefore to win the debate, but they wanted to find a reason for so doing that would not make them look like mere frightened self-seekers. Ardur Mensenrat put it acceptably:

"In the first place, we don't really know whether our action would be the critical factor in deciding the Prem for war or peace.

We have only Yungbor's word for that. If I know Alzander Mirabo, he will have made up his mind long since. If we don't furnish him with a pretext, somebody will.

"In the second, while we should deplore the massacre of the priesthood, if worst come to worst, we think we are more important to civilization than they and that they can be replaced more easily than we.

"Finally, if it were a question of eliminating war forever from Kforri, we might do otherwise. But it is not. Yungbor takes credit for the peace of recent decades, but the historiographers tell a different story. They say it is the result of the balance of power among the major nations. All are armed and touchy, all are full of tribal parochialism, truculent nationalism, and rancorous xenophobia. If the Prem does not go to war now, we have no assurance that somebody else will not do so next month."

There was a common sigh of relief that Mensenrat had put so succinctly the thoughts that others, including Marko Prokopiu, were groping for. Marko's mind had wandered during the debate, which tended to ramble and stray. In fantasy he saw himself gripping the wrist of the Stringiarch and poking the knife into her back, a couple of inches to the left of the spine where it would have a good chance of reaching the heart. . . .

He hesitated, fought down the horrible fear of making a fool of himself, and rapped on the table.

"Yes, Master Prokopiu?" said Mensenrat.

"If you gentlemen will excuse me," said Marko, feeling himself blush, "although I'm but an ignorant backwoods schoolteacher, without even a legitimate degree, I have a suggestion to make."

"Go ahead."

"What I suggest does not conflict with the plans for the debate but might make the debate unnecessary."

"Get to the point, sir," said Mensenrat.

"Well, I was thinking—we could seize the person of the Prem and hold him as hostage to make him let us go."

"Preposterous!" said somebody.

"Maybe, but what have we to lose? And speaking as one who has just escaped from the Isle of Mnaenn by that means, I think I may claim some small expertise in the science of kidnapping, which has perhaps been denied you learned gentlemen."

"What's your plan?" said Mensenrat.

"Well, the idea has only just dawned upon me, so I shall more or less have to make it up as I go. But, briefly. . . ."

The following morning, the eleventh of Perikles, Muphrid rose behind a thin cover of clouds. Marko Prokopiu stood with Boert Halran, Ulf Toksano, and other philosophers watching the inflation of the bag in the courtyard. This time, the balloon was not loaded with much fuel or ballast, because it was meant to be used as a captive balloon only.

Marko's throat hurt from talking most of the night. The philosophers would have argued forever, or until the Prem's executioner came for them, if Mensenrat had not taken Marko's side and bullied the rest into acquiescence. At that, many seemed convinced that if only they did nothing, the danger would go away of its own accord.

An Imperial soldier rode up to the guarded gate in front of the building, dismounted, and came in. He clanked up to Toskano, drew his sword, banged his spurs together, saluted, sheathed his sword, and extracted a folded paper from the cuff of his gauntlet.

"His Ineffable Serenity, the Prem of Eropia, sends you greetings," said the soldier, "and begs that you will have the inexpressible goodness to read this note and return your answer forthwith."

Toskano read the note and said to the philosophers around him: "He's coming. Second hour. Will you be ready, Boert?"

"Easily," said Halran.

Toskano spoke to the soldier: "Have the generous kindness, esteemed sir, to inform your master, the mighty Prem of Eropia, that we shall be overcome with gratitude at his serenity's gracious condescension in visiting our convention and witnessing some of our trivial experiments. All will be ready."

"I cordially thank your excellency," said the soldier, and clanked off.

Marko turned back to the balloon, but then came another interruption. Domingo Bivar rushed out of the hall with his long hair flying, waving a fistful of paper. He had bags under his bloodshot eyes.

"Doctor Toskano!" he shouted. "Doctor Toskano! Come quick! All is solved! We win! I must tell you . . . it is a thing most amazing. . . ."

Toskano asked Halran: "How soon will your balloon be inflated?"

"Not for another hour," said Halran.

Toskano followed Bivar; Marko and a few others followed Toskano. Bivar led them back to the room containing the Chimei microscope. One of the brothers was still on guard. The cards were stacked on the table.

Bivar sat down, dropped his notes on the floor, picked them up, reshuffled them, and began: "Gentlemen: what we have here is a record, made by some process long since lost, of the literature of the men of Earth before the Descent."

He waited until the buzz occasioned by this announcement had subsided, then went on: "These little gray spots on the cards are pictures, made by some process chemical, of pages printed. If Doctor Chimei can with a few bits of glass make the small appear large, why cannot the large be made small? But to continue. One of the boxes contained an encyclopedia complete. The other contained a collection of biographies of men of Earth. There were thousands of lives of Earthmen, some as long as whole books in themselves. Why only these two collections should have been preserved, or why the Ancient Ones should have recorded their knowledge in that form—"

Marko said: "Excuse me, Doctor Bivar, but those are not all."

"Not all? You mean there are more?"

"Yes. There were forty or fifty boxes on Mnaenn, but I brought away only those two."

"What? You idiot! Fool! *Tonto!* *Loco!* Saphead! Ass! Are you mad, that you did not fetch the rest? You should be—"

Toskano broke into the harangue, and Marko explained why he had not brought more of the boxes.

"Oh," said Bivar. "Pardon, pardon. I did not know. I am overturned, shaken up, and I have not slept since yesterday. Excuse me, pray! I need that you forgive, sir. But if we escape from the Prem, our greatest duty is to recover the cards remaining, by whatever means necessary.

"To continue. I could not read all these records in one night, naturally, especially as they are in a dead language and are very difficult. Old Anglonian, or English as those who spoke it called it, had a system of spelling very peculiar, in which almost any letter could mean any sound and conversely. There are many words that I do not know, though some I could guess from context.

"To go through all this material is the task of years. All I could do was to skim and skip about. Nor do the records deal with the actual Descent, as they were compiled before that event. They do tell us that Evolution is a correct hypothesis—but on Earth, not

on Kforri as far as we are concerned.

"Earth is a planet material, circling a small star near the star Mira. Earth is a little smaller than Kforri, but more of its surface is covered by water. It is also a little warmer on the average, but the climate is much more extreme, hotter than we are at the equator and colder at the poles. 'Kforri,' I learn, is a corruption of the name for this planet in Old Anglonian: 'K-40.' Earth has a variety of animals, both tame and wild, and five of its six continents are inhabited by men of several different races, differing among themselves much as we do.

"At the time when these records were reproduced in this form, the men of Earth had attained travel from their planet through empty space to other planets of their system or even to planets of other stars."

"How did they fly through space, where there is no air to breathe?" asked Toskano.

"They went in a vehicle tubular that squirts itself through space by blowing a great flame out its rear, and the ship of space is sealed and carries its own air."

Toskano persisted: "How can that work when there's nothing for the flame to push against?"

"I do not know, but let me get on. The other planets of their own system are either too hot or too cold, or do not have the right sort of air, to be comfortable places of dwelling. So they have gone to other stars to settle on their planets. I gather that one of these interstellar trips is a business formidable. It takes years and costs a lot tremendous, so they plan them with the utmost care.

"They send a small ship of space out first, which does not even land on the planet but circles around it, determines its temperature and kind of air, and so forth. Then they send a main expedition of two or three large ships of space with Earthly plants and animals so that they can set up a settlement permanent. Then one of the two or three ships of space will take all the peat, or whatever fuel they use, and fly back to Earth. If all goes well, they may send more ships of space, as they are much crowded for room on Earth.

"Something of the sort must have been done in our case. But for some reason the records were lost, or at least they were taken to Mnaenn and everybody else forgot about them. There must have been some sort of device to read these records, which was lost or broken. Perhaps there was a quarrel among the settlers. I infer that these settlers came from all over the Earth, and in settling

here they broke into several groups or tribes, speaking languages different. From these tribes are descended the major nations of today.

"There is much more in here; I have taken notes as you see. The names of our countries and cities are mostly the names of places on Earth, more or less corrupted. Lann is London, Vien is Vienna, Niok is New York, and Mnaenn is named for the Terran isle of Manhattan, which seems to have been another name for New York. The very gods proclaimed by the churches are famous men of Earth. The animals native of Kforri are named after similar animals that live, or have lived, on Earth. Thus 'tersor' and 'transor' are derived from 'pterosaurus' and 'tyrannosaurus', two extinct Earthly beasts. The jumping lizard that we call a 'rabbit' is named for a hopping animal of similar size and habits on Earth, although the animal terrestrial is a mammal with warm blood like us. The—"

A philosopher put his head in the door and said: "Doctor Toskano, the Prem is arriving."

Toskano jumped up and rushed out, Marko after him.

§ § §

Alzander Mirabo, Prem of Eropia, was just getting down from his huge, paxor-drawn, gilded coach when Marko reached the site of the inflation. The balloon was now almost fully inflated, swaying against the sky. The courtyard was full of kneeling philosophers. Toskano and Marko knelt, too, until they heard the Prem's vibrant voice: "Rise, gentlemen!"

Alzander Mirabo was a small man with a pale, nondescript face, unremarkable save for a certain sharpness of nose, hollowness of cheeks, and pouchiness under the eyes. He wore a plain black uniform with a blued-steel cuirass and helmet, contrasting with the gorgeousness of his aides. He came forward smartly, his heels clicking on the cobblestones, until he reached the balloon.

"Doctor Toskano?" said the tyrant. He recognized the chairman of the convention and stepped forward to give him a brisk handshake. "This is magnificent, Doctor. Where is the inventor? Doctor Halran? I congratulate you. I can already see military applications of this device. It must obviously be socialized. In fact, I consider it so important to the welfare of the masses that I shall order that, even though the philosophers lose this afternoon's debate, you shall be spared. Be so good as to explain how the device works, if you please."

Halran did, stumbling for words. The Prem asked a few

questions, which surprised Marko by their cogency.

"Are we ready for this flight?" said Mirabo. "I played truant from the work of the Empire for an hour, but already I can see the papers piling up on my desk."

"All ready, sir," said Halran. "You shall ascend with my assistant, Master Marko Prokopiu."

Marko's hand was wrung too. The little man had a steely grip.

"And one of my bodyguards, of course," said Mirabo, indicating a stalwart in chain mail close behind him.

"Oh, but your serenity!" said Halran. "I am not certain the balloon will hoist so much weight."

"Well, I'm smaller than average, so that should not much matter. We shall all climb in, at any rate, and if it won't rise, it won't rise."

Halran shot an apprehensive look at Marko, who gave a tiny nod. He thought that he could take care of the bodyguard. The Prem briskly climbed into the basket. The bodyguard followed, and Marko followed the bodyguard.

"Cast off!" said Marko.

The appendix was pulled free, the ropes were slacked off, and the balloon rose. Below, a crew of the burliest philosophers clung to the drag rope.

Up they went, swaying gently and rotating a little. The Prem exclaimed with delight as they ascended above the roofs, and Vien appeared spread out beneath them. Marko saw the loop of the Dunau River on three sides.

"What a view!" cried Mirabo, smiting his fist against his armored chest. "I soar like a tursor! Magnificent!" When they reached the greatest height allowed by the drag rope, the Prem exclaimed: "What a substitute for light cavalry! Now I shall need no more Arabi mercenaries for scouting. Praise be to Napoin! Master Prokopiu, turn around!"

Marko found that the Prem had produced a medal from his trousers pocket. Mirabo pinned this medal to Marko's chest. "You have merited well of me, Marko. Let this be a small token."

"I earnestly thank Your Serenity," said Marko. "Now just a minute. . . ."

His heart pounding with excitement, he stopped, grasped the ankle of the bodyguard, and straightened up, hurling the guard over the edge of the basket.

"Hey!" shouted the Prem, reaching for his sword.

The guard's shriek came up with diminishing amplitude as the

man fell. There was a loud slam as the armored body struck the cobblestones two hundred feet below.

Marko snatched up his ax from the floor just as the Prem whipped out his sword and thrust. Marko struck the darting blade aside with the head of his ax and, before Mirabo could execute a remise, whacked him over the helmet with the flat of the ax.

The Prem slumped down in the basket. Marko snatched the sword out of his limp hand, leaned over the side, and threw the weapon away.

The bodyguard lay in a widening pool of blood. The rest of the Prem's entourage were closing in on the philosophers with bared weapons, but Toskano shouted:

"If you kill us, the balloon will fly away!"

The guards hesitated. Marko called down at the faces that looked up at him like a swarm of pink dots:

"Do as I say or I'll throw the Prem over too!"

"What?" shouted an officer.

Marko repeated in full bellow.

"Do what?" said the officer.

"Just a minute." roared Marko. He turned and examined the Prem. The man was still alive, for which Marko was thankful. He had feared that he might have slain him.

Marko unbuckled the cuirass and the helmet, baring the Prem's nude scalp, and dropped them over, too, tossing them so that they landed on bare cobbles. With a length of rope, he bound the Prem's wrists and ankles. Alzander Mirabo began to come to during this process and had to be quieted by a punch in the jaw.

Marko leaned over again and shouted: "Your Prem is safe while you obey our orders. Doctor Toskano will tell you what to do."

After that, Marko had only to sit in the basket and smoke his pipe while he watched the proceedings. Sometimes he climbed up to stuff a briquette of peat into the auxiliary stove.

Under Toskano's directions, the balloon was towed outside the gate and the drag rope was belayed to the harness of the Prem's paxor. This process caused the paxor to fidget and bellow. Once the rope was fastened, however, the beast, no longer able to see the balloon, forgot about it.

Officers were sent out to round up other vehicles. Those philosophers who lived in Vien scurried away to gather up their families and possessions.

Marko heard the Prem move and looked around to see him sitting on the floor of the basket, glaring up at Marko with bared

teeth. His face held all the concentrated malevolence that one human face can. The instant his eye caught Marko's, the scowl was wiped away by a cheerful smile.

"Well, my good man," said Alzander Mirabo, "perhaps you can tell me what this is all about?"

"We philosophers, Your Serenity, were forced by your threat to take this drastic method of getting out of Eropia."

"Oh, you mean that silly debate? You took it seriously?" The Prem gave a little laugh. "My dear fellow, I was only fooling. I should not have cut off anybody's head, no matter who lost. That was just my little joke, to make sure that both sides extended themselves."

Marko rubbed a hand against his bull-neck. "Maybe so, sir, but such a joke somehow doesn't seem funny to the owner of the head."

"Now that you mention it, I see your viewpoint. Where is my guard?"

Marko pointed downward.

"I remember now. Dead, I suppose?"

"He looks it."

"Poor Sezar! A brave, faithful, and honest fellow. Aren't you sorry you murdered him?"

Marko had not thought about the guard as a human being, but he said: "I suppose I am, but that's war."

"Well, let's call off this whole fantastic escapade, what do you say? Lower me, and as soon as I'm safely on the ground I will order that all the philosophers be allowed to go free."

Marko looked stonily at his captive.

"There shall be no reprisals, either."

Marko kept silence.

"You don't believe me? Well, I probably shouldn't in your shoes. But see here, this can't go on. You cannot possibly get away with it. You can't seize the person of the head of the world's greatest nation, the commander of the strongest army, like an Arabi kidnapping a caravaneer. Put me down! I, the leader of the masses of Eropia, command you! You cannot resist!"

Marko said nothing. Mirabo tried another tack: "Well, while I cannot say I am pleased by this treatment, I can't help admiring the audacity and adroitness with which you carried it out. You ought to have gone to work for me. I still might have a place for you. Why join these mumbling, peering old pedants? Anyone can see you are more the physical type. Why not throw in with me? I



can always use a man with your strength and dash."

Marko scowled. The Prem could not know that Marko perversely took no pride in his bulging muscles but was, instead, consumed by the ambition to become a respected scholar. He replied only a curt "No."

For an hour, the Prem kept trying to persuade Marko to let him down. He tried every approach. He threatened, blustered, bribed, wheedled, and appealed to Marko's better nature. He even tried to put Marko to sleep by hypnotism. Nothing worked.

Then the bizarre procession got under way, heading for the south gate. First came the Prem's state coach, an ornate vehicle of glass and gilt as big as a six-horse tally-ho. To the back of the Prem's draft paxor was attached the drag rope that held Halran's balloon, swaying and rotating, while the huge coach rumbled behind. Then came a long line of carriages and wagons crowded with philosophers and their gear and dependents.

"You Vizantian savages are a stubborn lot," said Mirabo with a sigh, after his victim had shrugged off the tenth effort to get the better of him. "Where are we going?"

"To Massey, sir."

"And then whither?"

"Oh, we thought we might borrow one of your ships."

"I must say, I never thought philosophers could be men of action as well. I'll be more careful whom I play jokes on in the future."

"Oh, I'm nobody at all, sir," said Marko. "I've merely been lucky."

They passed out through the South Gate. This took a lot of arranging, because the city wall was continuous above the gate. The drag rope therefore had to be untied, carried over the gate, and reattached on the far side. The circuslike procession rumbled over the bridge across the Dunau and plodded out along the road for Massey, the main seaport of Eropia.

When Marko's supply of peat got low, he replenished it by lowering a small basket by a light rope from the balloon to the ground. When he and his captive got hungry, he hoisted up a meal by the same means.

"You fellows seem to have thought of everything," said the Prem.

"That, sir, is what brains are for."

"Don't I get any coffee?"

"I'm sorry, but I need it all. It won't hurt you to go to sleep, but if I did, I might wake up on my way to the ground."

Alzander Mirabo laughed. "You are twice my size! I couldn't toss you around that way without awakening you."

"You might stab me or something."

"Not if I'm trussed up like this."

"Oh, you might wriggle over and rub your bonds against my ax, like that character in the novel by Shaixper."

The Prem laughed. "Are you a mind-reader too?"

Marko grinned. He had merely put himself in the Prem's place. Thus he had kept himself from weakening when the Prem had tried to beguile him with smiles and tempt him with promises. He knew the Prem's reputation for cold-blooded perfidy.

V.

Muphrid had set, but the twilight lingered, when the odd caravan arrived at Massey. Marko watched sleepily as the paxor lumbered down the docks of the Imperial Navy. There was a long palaver among Toskano, the officer who had come with the procession from Vien, and another officer of the fleet. The philosophers hauled the balloon down to a height of fifty feet. A reflector lantern, shone on the face of the Prem, convinced the naval officers that their lord really was captive.

After another hour's delay, the philosophers detached the balloon from the weary paxor and carried their end of the rope aboard a ship, the steam ram *Incredible*. Marko, who had never been aboard a steamship, watched with interest. The ship was a sturdy-looking craft about two hundred feet long, with a big iron spike at the waterline at her bow, a strip of bronze armor running around her waterline, and a tall, thin funnel in the waist.

The philosophers had planned in advance to insist upon the merest skeleton crew on their ship; just enough to operate the machinery and steer. Prem Mirabo, watching the preparations, asked Marko Prokopiu: "Now that you are ready to set forth, when will you release me?"

"When we reach our destination, sir," said Marko.

"What? But that's impossible! Who knows what conspirators might not seize my desk in my absence?"

Marko shrugged. "I think, sir, we could bear that disaster with becoming fortitude. And didn't you tell me you were the idol of the masses? Surely they'd stand by you!"

"That is no joking matter," grumbled the Prem.

The stack of the *Incredible* began to spit smoke and sparks. The breeze carried the smoke aft until it enveloped the basket and made Marko and the Prem cough and rub their eyes.

"Will you suffocate as well as kidnap me?" groaned Mirabo.

Marko suffered along with his captive through another half-hour, until the *Incredible* cast off and put out of the harbor with a great blowing of whistles and bonging of bells. The stack went puff-puff-puff, making Marko and Mirabo cough more than ever. As the lights of the dark quiet harbor slid away behind them, the philosophers hauled the the balloon down to the deck.

Marko climbed out, stretching and yawning, and gave a hand to the Prem. The philosophers ringed the stern in helmets and hauberks.

"Your arms locker was well stocked, Your Highness," said Ulf Toskano. "Don't think to set the crew on us, because we outnumber them three to one and have removed all arms out of their reach. We shall also guard you day and night against any unto-ward event."

Marko mumbled: "Doctor Toskano, where can I sleep?"

§ § §

On the fourteenth of Perikles, the *Incredible* raised the Isle of Mnaenn but hung off on the horizon until sunset, so as to make her approach under cover of darkness.

When he had awakened, Marko had been fascinated by the ship. He spent hours below, watching the great bronze connecting rods heave and the cranks go round. He pestered Doctor Voutaer, the designer of the ship, for information on the workings of a steam engine.

The wind rose, and a choppy sea made the *Incredible* pitch like a cork. When she buried her ram, her screw came out and she shook herself like a wet dog. Gusts of rain beat across the slippery deck, and Marko suffered the tortures of seasickness. The Eropian sailors prayed to the sea god Nelson to save them from the terrors of the sea and the spells of the witches of Mnaenn. Some philosophers, who had opposed the conquest of Mnaenn, went about saying "I told you so."

Looking towards Mnaenn with rainwater dripping from his chin, Halran said: "I do not know how we shall ever get the balloon inflated from this tossing deck." He glanced back gloomily to where the bag thrashed and lunged in its tackle. "I am sure the fabric will rip from this rough handling. If you come down in the sea, Marko, you cannot swim in armor. The mere thought of what

you plan gives me the horrors."

Marko answered: "Anything to get off this accursed deck and get my stomach back again. I think I left it fifty miles astern. This boat is worse than camel back."

Standing nearby with his wrists bound, Prem Mirabo gave a loud laugh, raising his upper lip to display his teeth.

"Stop glooming," roared Ulf Toskano, slapping Halran on the back with irritating heartiness. "We ran a bigger risk when we seized the Prem. And this rain will have driven the witches indoors. You might accomplish your task without meeting one."

"I don't count upon that," said Marko. He stood in a suit of three-quarters armor, which had been pieced together out of the largest pieces in the arms locker.

The wind moderated, although the rain continued, as they chuffed towards the island. Before midnight, the *Incredible* stood off the northwest corner of Mnaenn. She presented her stern to the island, with her engine barely turning over and a trysail out to hold her head into the wind. Marko Prokopiu climbed clanking into the basket.

"Cast off," he said.

Away went ropes and ballast. The balloon, swaying and jerking, rose from the stern. Marko heard the fabric strain against its ropes. The philosophers had not lit the auxiliary peat stove, since the balloon would not be aloft long.

The basket swayed like a pendulum. Straining his eyes into the featureless dark, Marko felt a return of his seasickness. The reel paying out the drag rope on the quarterdeck squealed. The jerking eased as more rope was paid out, allowing slack to accumulate between jerks.

Marko stared towards the cliff. In this murk, he could not even tell direction. The balloon had started to rotate, first in one direction and then in the other.

There was nothing to do but grip the edge of the basket, feel his ax for the hundredth time, and try to see where nothing could be seen. The rain pattered against his armor.

Then another sound came, muffled by his helmet, through the hum of the wind in the cordage and the roar of the surf: the sougling of wind in trees. Directly below, Marko thought he could see the shifting ghostly-white band, which marked the surf against the base of the cliff. This ribbon slid under him and disappeared as the cliff edge occulted it. He should be over land. He pulled the valve cord.

It stuck.

He pulled with both hands. The rope gave all at once with a ripping sound and a loud hiss, and the bottom dropped out of the basket.

In the dark, Marko had pulled the ripcord by mistake, opening a slit several feet long in the upper part of the bag. The hot air rushed out, and the balloon fell.

It struck with a crash, hurling Marko to the bottom of the basket. He had flexed his knees before striking, so no bones were broken. Still, the shock half stunned him, so that it took him several seconds to rise shakily to his feet.

He picked up his shield and climbed out of the basket, pushing through a tangle of ropes. He was on top of the cliff, all right, several feet back from the edge.

His next task was to light the little pyrotechnic flare the philosophers had given him, to signal them to sail around to the



landing place. But rain had gotten into his tinder box. No matter how often he clicked the flint-and-steel lighter, it refused to light.

He gave up. The balloon could not be hauled back aboard the *Incredible*. If Halran tried to haul it back, it would merely be pulled off the cliff, to smash on the talus below and be lost in the sea. If Marko cut the rope, Halran would know from the slackening what had happened. At least, he would know that the balloon was no longer attached. If Marko could tie a knot in the rope before letting it fall, those aboard would infer that he had landed safely and would bring the ship to the beach.

Marko took out his ax, got a grip on the rope, and chopped. At the third try he severed it.

The rope was slippery with the rain and much heavier than he expected. The weight of the long catenary snatched the end out of his grasp.

Marko sat down on the phosphor-grass with his head in his hands. He almost wept with chagrin and vexation.

After a few minutes, he roused himself. His eyes had now adjusted to the darkness. Out to sea, he could just make out the black bulk of the *Incredible*. Would she put out to sea, for Niok or some other non-Eropian port, leaving him? He did not fear the witches in a stand-up fight, but he could not go without food and sleep indefinitely.

The guards would soon stumble upon the balloon and know that something was up. Well, he could fix that. He pushed the basket, foot by foot, until it toppled over the edge of the cliff, dragging the bag after it and almost taking Marko along by tangling him in its ropes. Halran would not like the loss of his contraption, but the balloon was of no present use and only increased his danger.

Marko looked out to sea again. The black shape was moving. At first he could not tell whither, but after a while it seemed to be headed to his left—towards the beach. An occasional red spark flew from its stack.

Marko walked towards the town of Mnaenn, paralleling the cliff edge but tramping across country. If he followed the cliff path, he would be too likely to meet an armed witch on her rounds. The ship traveled faster than he could walk in his ironmongery, but it had to detour to avoid rocks and shoals.

The rain beat against his helmet. His boots sank into the soft muddy soil and came out with sucking sounds. He detoured the town to reach the cliff on the south side, where the landing was.

At last he saw the section of cliff top he sought, with black

silhouettes marking the location of the rope ladder. Voices came out of the murk:

"... I saw them, I tell you. There's another!"

"You're mad, Als. What would sparks be flying around out there for?"

"You are near-sighted if you don't see them. We should report to the sergeant."

Marko stood still, hoping he was invisible in his black armor.

"Another thing," came a voice, "I could swear I've heard sounds as of armed men moving."

"Your imagination is inflamed, my dear. You should..."

The muttered argument went on and on. Then one said:

"She's right, girls; there is a ship out there! Look!"

Marko stepped forward. The guards all had their backs to him. He thought there were three or four but could not be sure. He struck one over the head with the flat of his ax.

Clang! went the ax on the helmet. The guard dropped. Clang! went another. The other guards emitted piercing shrieks. Something clanked against Marko's shield, something else scraped his breastplate. There were footsteps running away and the jingle of accouterments. Other shouts answered from the village.

Marko felt around the rope ladder until he found the reel and the cord that held the crank. A chop severed the cord. Marko heaved on the crank, which turned, lowering the ladder down the face of the cliff. As the ladder unrolled, its increasing weight made the wheel revolve of its own accord.

Behind him, Marko heard the sound of armed witches approaching. He turned, letting the reel run on its own, and got out his ax again. With a great yammering, several women came at him at once. He could barely see the points of their spears, which he caught on his shield.

"Get behind him!" shouted voices. "Surround him!" "Thrust for his crotch!" "He has lowered the ladder!"

One witch got too close. Marko stretched her senseless with the flat of his ax.

"Is he the only one?" "Crank up the ladder again!" "All together now, push him off the cliff!"

Marko shifted as fast as he could in the darkness so as not to present too easy a target. The darting points clicked and rasped against his defenses. From seaward came a hail.

"Hurry!" bellowed Marko. "You'll find the ladder down. I'm holding them off."

Clang, dzing, clank, went the witches' weapons against Marko's armor. Again and again he whirled, laying about him with his ax to beat them away from the ladder. One got a grip on his thigh. He struck her with his fist to knock her loose and heard her shriek as she fell off the cliff in the dark.

"They're coming up!" "Drop boulders on them!" "Cut the ropes of the ladder!" "The darkness is full of them!" "Get the rest of the women, or we are lost!"

Marko struggled on and on. Something sharp found the unarmored back of his left thigh, and the leg turned weak under him.

"All at him at once!" "Fetch the Stringiarch!" "Get some lanterns!" "Eee, there's another behind us!"

Marko leaned against the reel of the ladder to take the weight off his injured leg.

"One more try!" panted a witch officer. "Push him off the cliff!"

Marko limped around the reel, stumbling over the witches he had knocked down and swinging his ax. He roared: "Curse you, stand back or I'll give you the edge! I've been sparing you, but I won't much longer!"

Lanterns bobbed in the darkness. A voice called: "Stand back to let us shoot!"

Marko dropped to one knee beside the reel, holding his iron shield up in front of him. Presently there was a snap of bow-strings, and a thrum of quarrels. Several sharp hammer blows struck the shield. Another grazed his helmet.

"Get around to the side. He cannot face all ways at once."

Something moved behind Marko. He rose, turning and raising his ax.

"Is that you, Master Prokopiu?" said the deep voice of Ulf Toskano. Others crowded up behind him. The philosophers opened out into an armored rank and surged forward. For an instant there arose the clangor of weapons on armor, and then with cries of despair the witches broke and fled.

§ § §

"Aye," said the Stringiarch, sitting on a chair in the Temple of Einstein before the philosophers. "I know the true story of the Descent, at least as it has been handed down from Stringiarch to Stringiarch." She glared up at the semicircle of intent faces, shiny with sweat and wet in the lamplight. "If I tell you brigands, will you spare my girls?"

"We had no intention—" began Toskano, but Marko poked him and interrupted:

"If you tell the truth, madam, no harm shall befall your charges. But take care, for we have means of confirming or refuting your story."

"Very well. The story, as it has come down to me, is as follows: Before the Descent, the men of Earth had become so many that there was not enough land to support them. So their gods ordered them to build two great ships, promising that when the ships were finished they, the gods, would waft them through the empty space between that world and this—"

"She means the ships of space I told you about," interrupted Bivar. "And the gods were nothing but the leaders political."

Katlin glared at the little Iverianan but continued: "In time the ships set out from Earth. Between them they carried nearly two hundred people, as well as the female young of several domestic animals of that world and spells for causing them to conceive and bear without the presence of the male. Also seeds, tools, and other needful things. The gods' commands were to land both ships on Kforri and set up a settlement for colonization and study. Then the crews of both ships should enter one of the two, and the gods would take it back to Earth.

"Whether the gods became tired of carrying these great heavy ships so many millions of miles and dropped them in trying to set them down, I do not know. But in any case both vessels were damaged on landing, to a degree that prevented their returning. There was little harm, however, to the people in the ships, who therefore disembarked and set up the colony as planned. They hoped that, when the single ship failed to return at the appointed time, Earth would build another ship and persuade the gods to carry it to Kforri to find out what became of them.

"Here trouble arose. While the crews of the ships were nearly all men, the settlers, who were all philosophers and men picked for their skill in colonization, had wives. The settlers said that, as the gods had so arranged matters, there was nothing to be done about it.

"But the crewmen lusted after the wives of the settlers. A machinist, Hasan Barmada, said that the gods had all gone back to Earth and deserted the colonists, and that therefore no heed need be paid to their commands. He formed a conspiracy and, by a sudden uprising, his men slew nearly all the male colonists, as well as their own officers who sided with the colonists. When the fighting was over, there were about a hundred persons left on Kforri, a few more men than women.

"The crewmen took the wives of the colonists for their own and begat their kind. Because they had blasphemed and sinned against the gods, the gods did not inspire them with wisdom. They neglected the knowledge that the philosophers had brought with them from Earth, and in two generations had sunk to the level of barbarians.

"Also, they quarreled among themselves and split up into seven different tribes, according to the parts of Earth they had originally come from. Thus men from those parts that spoke Old Anglonian—places called Britain, Ireland, North America, and some others—formed the Anglonian tribe. Men from the land of Europe formed Eropia. Men from the islands of Russia and Balka formed Vizantia, named for the Balkan city of Byzantium. And so our modern nations arose.

"One philosopher who had much divine blood in his veins, an Anglonian named David Grant, escaped from the massacre with two of the women and the cards composing the Great Fetish. On Earth, there was a magical instrument for reading these cards. Whether such an instrument had been brought to Kforri and then broken I do not know, but in any case David Grant had no such device with him. Nevertheless, he hoped that something would happen to make these records of Earthly wisdom available once again—"

"It was called micrography," said Bivar.

"He came to this island on a raft," continued the Stringiarch, "with several women who fled from their new mates. His descendants built this temple. He told his women and children about the gods of Earth and about their duty to preserve this divine wisdom. The earthly god whom he most admired, Einstein, became after his death the special patron god of Mnaenn.

"David Grant, or Devgran as he is now called in common speech, had many daughters and granddaughters but no sons. Hence, an all-woman settlement came into being. Since the women feared and hated the men of the mainland because they had slain their own true husbands, they resolved never to let any settle on Mnaenn. From that day to this the settlement has kept up its numbers in the manner you know."

Domingo Bivar asked: "Pardon, madam, one question. If we are descended from a few crewmen, how do we have so many surnames different?"

"During the early generations, the people did not follow the Earthly custom of giving all children of one marriage the same

surname, because there were so few of them that such names would not have been distinctive. Instead, they gave them names of other men whom they had known or heard about on Earth. Thus many were named for famous earthly men, gods, and demigods. Others received made-up names, or were named for their attributes or occupations. After a while they reverted to the original custom. Even so there are, for example, many thousands of Bivars in Iveriana besides yourself, Doctor."

"Thank you," said Bivar. "There are some places anomalous in your narrative; but I am sure that, when we transcribe the records, explanations rational of everything will transpire."

Katlin spoke bitterly to Marko: "Master Prokopiu, I did not believe you when you claimed you were the prophesied son of Mnaenn, come back to read the Fetish and end the Stringiar-chate. I am sure no man-child could have been born and smuggled off the island, as you assert; our control is too close in such matters. However, you can read the cards with the instrument of these Mingkworen. And whereas we are in your power, I suppose we might as well put the best face on things. What will you do with us? Throw us over the cliff, as you did poor Lizveth?"

Marko did not himself really believe the son-of-Mnaenn story but had thought it up to give the witches a graceful excuse for surrendering. He looked at Toskano, who said:

"Not at all, madam. We regret the death of that witch. We did not mean to hurt any of you."

"Soft words will never right the wrong of your deeds."

Toskano said: "True, madam; some consciences among us are not altogether at ease. But then, by your practice of male infanticide, which would fill most people with horror, and by your unjust treatment of Messers Halrañ and Prokopiu when they unwittingly trespassed on your land, you have given up your claim to sympathy."

"What do you intend?"

"Oh, some of us will return to our own countries. Others, especially those from Eropia, will stay here and set up a philosophical republic. Among them are enough single ones to provide husbands for such of your girls as wish them."

"Hm," said ex-Stringiarch Katlin, wrinkling her nose in disgust. "If our traditions speak true, the men of Earth tried to set up such an ideal government many times but never succeeded for long. That, however, is your problem."

§ § §

Marko had no chance for more than a brief greeting with Sinthi that night. He had much to do, his wound hurt, and he was tired out. He learned that, when the rope had been hauled back aboard the *Incredible*, its cut end told of Marko's safe landing and led Toskano to bring the ship to the beach.

Next morning, Marko stood on the edge of the cliff watching Muphris rise. A little way off, Boert Halran was looking over the edge and lamenting the destruction of his beautiful balloon. Domingo Bivar was kneading Marko's arm and talking excitedly of the wonderful things the philosophers would do when all the records of the Fetish had been transcribed.

"We shall build a ship of space of our own and fly back to Earth to see why they have forgotten us!" he cried. "It is wonderful! The rest of the Fetish includes books innumerable—on history, science, language, everything. There are even sections of fiction and verse—"

Marko, who disliked the little man's effusiveness, disengaged his arm as Sinthi came by. He thought her the most attractive object he had seen in years.

"Hello," he said. "You see, I came back as I promised."

"That is right. Where are you going now?"

"Well, since the Stringiarchate is over, I thought I might stay here. While I didn't really do anything, the philosophers seem to think me worthy of their company."

"I heard they chose you Prez or something."

"No, not quite. They want me to be a kind of vice-manager under Toskano. I was even thinking of sending for my mother."

"Oh. You were going to take me away, weren't you? You promised."

"Well . . . I suppose . . . Look, maybe we can figure out something just as good. You see, ah. . . ."

They stood, Marko looking down and Sinthi up. Marko had a feeling that she would not mind if he grabbed her right there. Instead, he stared into space, shifted his feet, blushed, gulped, stammered, and finally said:

"Let's walk along the cliff path. I'm sure I have many interesting things to tell you about."

They strolled off without bothering to excuse themselves to Domingo Bivar. Marko was limping a little and talking volubly. Presently he was holding Sinthi's hand. Bivar, looking after them, sighed a romantic sigh, brushed his hair out of his eyes, and hurried off to find another arm to knead.

LETTERS

Dear Mr. Scithers:

I have been writing stories for about 25 years (since age 8) and have never had the courage to submit one to anybody until I read the editorial by Dr. Asimov in the latest issue of his magazine.

I must say I was greatly encouraged by his editorial. I have no qualifications for writing other than the pleasure it brings me and being a good speller. Therefore, I'm an absolute greenhorn about what to ask you. Dr. Asimov says of you, "He will even send you directions as to just what kind of science fiction we are looking for. . .," so would you please send me this information. I am enclosing a self-addressed, stamped envelope for this purpose.

Sincerely,

(Mrs.) Montine Manfredi
Fort Pierce FL

This is one of the letters that have been received from readers (some young, some not-so-young) who say they have been encouraged by my editorial asking for stories. Good! I have already accomplished something important.—Isaac Asimov

Mrs. Manfredi is better qualified than she realizes; she does know how to follow instructions: she asked for our directions first, she enclosed a self-addressed, stamped envelope (those of you outside the U.S.A. should enclose an International Postal Reply Coupon instead of a stamp), and she sent the request to the editorial address of the magazine: Box 13116, Philadelphia PA 19101.—George Scithers

Dear Dr. Asimov and Dear Mr. Scithers:

Having devoured the first three issues of *IA'sfm*, I can now comment: Hurray! A magazine after my own heart. I like SF and I like hard SF best. I've enjoyed most of the stories that come to some point instead of ending in a muddle. Keep the nonfiction articles coming too. The piece on the Smithsonian Museum was good; and the item, "Is Physics Finished?", was more informative than some of my college lectures.

Sincerely,

Gwen S. Lubey
Utica NY

A letter after my own heart. Naturally we won't publish only praise, but a sample now and then is surely permissible.—Isaac Asimov

Dear Mr. Scithers:

I have been writing science fiction stories for almost three years. In that time I have received preprinted rejection slips, form letter rejections, form letter rejections indicating that the editor liked my style, and—very occasionally—a sentence or two written on the back of the rejection indicating where the editor in question thought the story could be improved.

I was most surprised and gratified this evening when I received my manuscript "F.O.B. the Galaxy" by return mail from your magazine, and upon opening the envelope, found a two page detailed critique of the shortcomings and strengths of the plot and characterization. In one fell swoop you have managed to double the amount of feedback which I have received in three years of effort.

Since I know how busy editors are, I felt that this letter of appreciation was warranted. It is extremely difficult to learn the craft of writing without a dialogue between the writer and the editor. Your efforts on my behalf are greatly appreciated.

Sincerely,

Michael A. McCollum
Tempe AZ

Would that George could do this for all submissions. If he were a hundred people, working hundred-hour days, he could. But whenever he can, he does, if only to encourage hopeful talent for our own self-interest.—Isaac Asimov

Sometimes, of course, a story quite as good as Mr. McCollum's might get a printed form letter because the letter happens to describe precisely what is wrong with the particular story. Other times, a story may be rejected with virtually no comment because the editor cannot decide what's wrong with it or how it might be improved—editors make mistakes too.—George Scithers

Dear Dr. Asimov,

At the end of February my husband and I returned from a three week trip to the Soviet Union. An incident occurred there that I thought would be of interest to you.

When we entered the country we were searched thoroughly, and a large quantity of literature that we were carrying was confiscated. Mostly this literature consisted of Hebrew books and some Russian books on Jewish history. All of our other, non-Jewish literature—mysteries, magazines, etc.—was also taken away and then returned before we left customs. All, that is, except a copy of your new science fiction magazine. I protested loudly since I had not finished

reading it, but to no avail. Since they claimed we would receive the material back before our departure from the Soviet Union, I figured I would at least have it to read on the journey home.

However, when the literature was returned to us on our departure, there was no *Isaac Asimov's Science Fiction Magazine* to be found. In its place was a Hebrew book that we had not brought with us!

So you see you obviously have a reading public among the customs officials or the KGB. We later found out that science fiction in general (and perhaps Asimov in particular) brings a very good price on the Soviet black market.

By the way—I bought another copy of the magazine and have enjoyed it immensely.

Sincerely,

Mitzi B. Alper
Chicago IL

As someone who was born in the Soviet Union, I welcome this evidence that literary taste in the Homeland is impeccable.—Isaac Asimov

Dear Dr. Asimov:

I just wanted to tell you how much I enjoyed the Fall issue of your magazine.

As someone working towards a B.S. in physics, I particularly enjoyed the article by Milton Rothman, "Is Physics Finished?" It would be nice to see more articles by Dr. Rothman in future issues of *IA'sfm*, for he is nearly as good an 'explainer' as you.

The Martin Gardner "Space Pool" puzzle also provided some enjoyment. I calculated 19,600 as the last tetrahedral *and* square number very quickly (after I programmed my HP-25 to solve it, anyway)!

Sincerely yours,

Mark Scheuern
Clarkston MI

Well, Milt has been a friend of mine for over thirty years now. As long as he stays nearly as good, okay. But that's all, Milt, you hear?

—Isaac Asimov

Dear Dr. A.:

Migod! Finally, a letter column for fans! I thought that went out with the old *Startling Stories*. Why, everybody knows that today let-

ter columns are supposed to be exclusively used as a table for the scientific debates concerning the science article in the previous issue. Even the opinion letters concerning stories are scientifically oriented. How dare you set up a column in which fans can converse honestly about the stories in the past issues? Do you know what could happen if the others started following suit and printed letters that one could actually read without needing a PhD in Chemistry, Nuclear Sciences, Biology, and Literature? Why, why we might be able to turn to the letter section again as a source of entertainment and not as something to remind us of how ignorant we really are.

Tim Roaix
South Windsor CT

I guess we're just old-fashioned enough to like a little fun and games in this grim old world.—Isaac Asimov

June 17, 2053

Dear Mr. Scithers:

While browsing through a 'rare book' store this morning I happened across the first two editions of *Isaac Asimov's Science Fiction Magazine*. I immediately purchased both copies for 132 New Dollars (about 27 of your dollars) apiece. Even at that price they were underpriced. Both magazines were excellent. Being a history student I immensely enjoyed the article on the opening of the Smithsonian National Air and Space Museum (now on exhibit is a model of the first working nuclear-powered spaceship, and the first Martian manned-lander is also there along with several other historical displays; I must add that the 'Life in Simulated Environmental Conditions' machine works, quite well in fact).

And I particularly enjoyed the editorials by the Good Doctor himself, whose name I have been so bold to put on my shuttle-craft (*Asimov's Dream*).

I enjoyed the magazine so much I felt congratulations were in order, so I am giving this letter to a friend who is taking a field trip to your time (yes, time-machines do work) next week. He will mail it for me.

Well, thanks again to all concerned for the excellent work done on this magazine.

Yours sincerely,

Mark O'Connor

A voice from our future is always welcome—but how are our monthly issues of 2053? Holding up? Is George still doing well as editor now that I have gone to my reward?—Isaac Asimov

Gentlemen:

Had the Fall 1977 *IA'sfm* been the first issue of your magazine I had seen, it would surely have been the last I would have bought. While most of the stories were mediocre and trite, two of them were bloody awful.

"When There's No Man Around," in addition to being poorly written, was downright offensive. Mr. Goldin assembled clichéd male supremicist conceptions of women's thinking and behavior, and transported them to Mars. He should have abandoned them there instead of trying to turn them into a story.

"Minster West" reads as though Mr. Cochrane started to write a novel about big business of the twenty-first century and got bored with it (as well he should, considering the quality of the writing). Evidently, he then decided to write a short story about technology and automation. It's a pity he didn't get bored with that, too, and decide to drop the whole project.

As these two authors didn't have taste enough not to submit these stories, you should have had intelligence enough not to print them. The other stories in the Fall issue were merely unmemorable. While I recognize that "90% of everything is crap," as a general rule, when a particular issue hits 100%, it's more than a little irritating. I hope that the quality of the winter issue is more in line with that of the first two.

Sincerely,

Linda Manning Myatt
Rochester MI

Please try again. If we've hit so low a bottom, there's nowhere to go but up.—Isaac Asimov

Dear Dr. Asimov:

I read and enjoyed the Fall 1977 issue of *IA'sfm*, so much that I'm sending a check for a 4-issue subscription. Of the stories and features I enjoyed, I would rank them as follows: 1, "Joelle"; 2, "Minster West"; 3, "Good Taste"; 4, "In Darkness Waiting"; 5, "The SF Conventional Calendar"; 6, "On Books"; 7, "Home Team Advantage"; and 8, "Is Physics Finished?" In regard to the last, I hope we will see your comments on the science front in your magazine.

Your science column in *F & SF* is the first thing I turn to.

Sincerely,

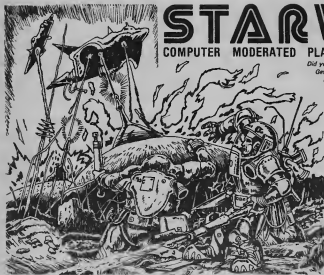
Gene E. Thompson
West Covina CA

I don't think I should duplicate my own efforts. In this magazine I would like to concentrate on my views on science fiction, rather than on science.

—Isaac Asimov

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—George Scithers



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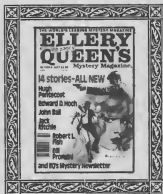
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